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PACIFIC PULP *and* PAPER INDUSTRY

Volume 2
Number 10

SEPTEMBER, 1928

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Single Copies, 35 Cents



Photo Aerial Survey, Portland, Ore.

BELLINGHAM, WASHINGTON

The San Juan Pulp Manufacturing Co. Has Just Completed a Program of Expansion in Which the Capacity of the Plant Was Doubled. Beyond the San Juan Mill in the Middle Distance Are Seen the Buildings of the Pacific Coast Paper Mills, Another Bellingham Institution.



This form of speed reducer is available in ratings from 2 to 75 horsepower and reduction ratios up to 7 to 1. Rating up to 15 horsepower are carried in stock.

A New Speed Reducer—with Texropes

Carried in stock
2 to 15 h. p.

THIS new reducing drive combines the well-understood advantages of simplicity, quiet, freedom from attention—and power economy.

The Texrope Drive, the speed-reducing and power transmitting medium, has an efficiency of 99%. It requires no lubrication and is always silent. The multiplicity of belts insures continuous operation.

The small high-speed Allis-Chalmers roller-bearing motor is wonderfully efficient. Its power factor is high, and its cost, compared to a special slow speed motor, is remarkably low.

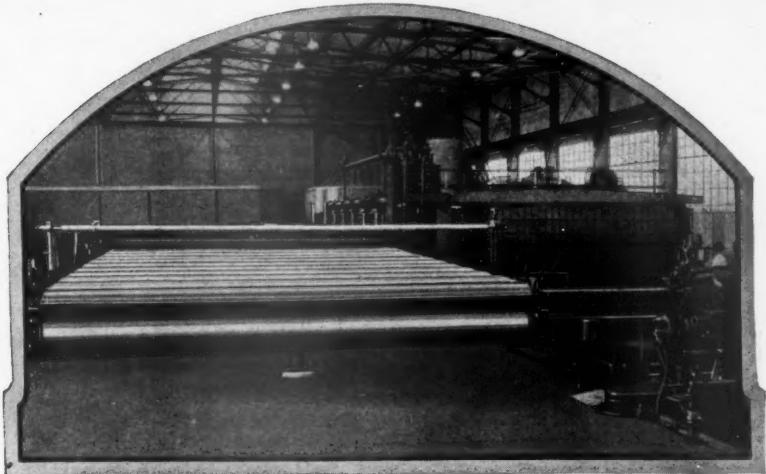
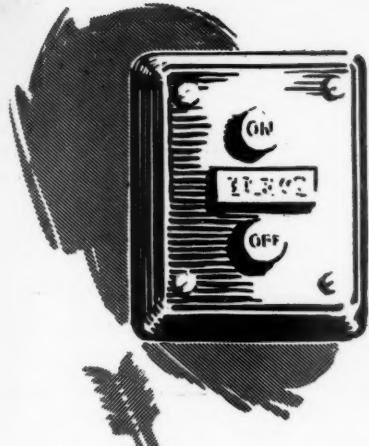
The countershaft is equipped with Timken Bearings and can be furnished with a pulley, a sheave for Texrope Drive, or a coupling for direct connection. A single bed plate and universal slide rails insure permanent alignment of all parts as well as allowing for varying motor dimensions.

ALLIS-CHALMERS MANUFACTURING CO., MILWAUKEE



ALLIS-CHALMERS TEXROPE DRIVE

Pacific Pulp & Paper Industry is published monthly February to December, and semi-monthly in January, at 71 Columbia St., Seattle, Wash. Subscription: U. S. and Canada, \$4.00; other countries, \$5.00. Entered as second class matter May 20, 1927, at the Postoffice at Seattle, under the Act of March 3, 1897. Vol. 2, No. 10, September, 1928.



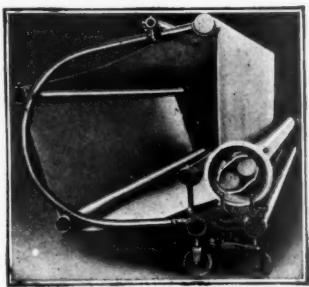
Just press the Button

THE Removable Fourdrinier has so reduced the operations necessary in making wire changes that you can hardly believe it. You press a button and the entire Fourdrinier part rolls out by power as a unit. It is so simple that you marvel at it. With the Fourdrinier out of the way, the task of installing the wire becomes an easy one. Nothing to remove, to lift, to carry, to align up. Just drape the wire with the convenient means at the disposal of Removable users—roll the Fourdrinier back into place—and you're ready to go!

Once you see the Removable method, you will adopt it. Many mills have had it installed on old machines, much to their satisfaction—and new machines invariably demand it.

**The BELOIT way is the
MODERN way**

BELOIT IRON WORKS, BELOIT, WIS., U. S. A.



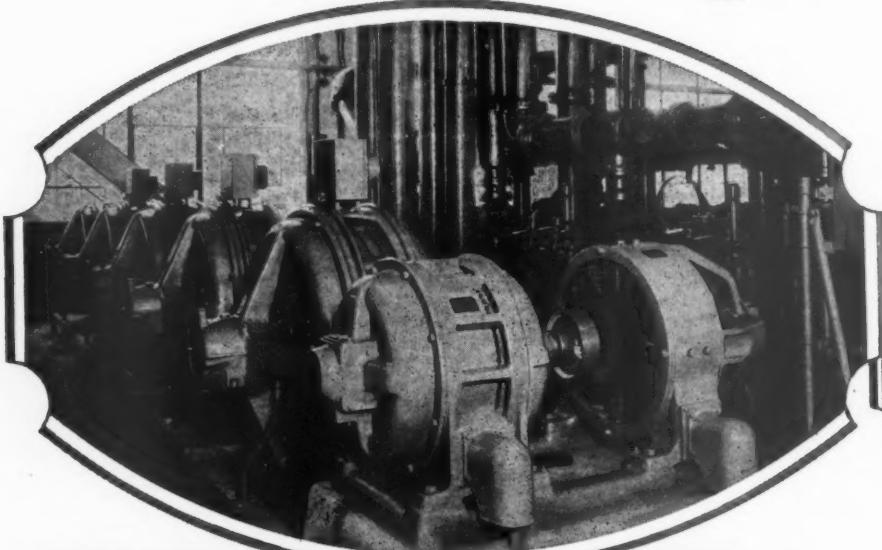
The Beloit patented wire carriage makes the transferring of the wire to Fourdrinier a simple and quick operation. Wire is draped into position on carriage and used as a "spare," always ready for action.

The BELOIT

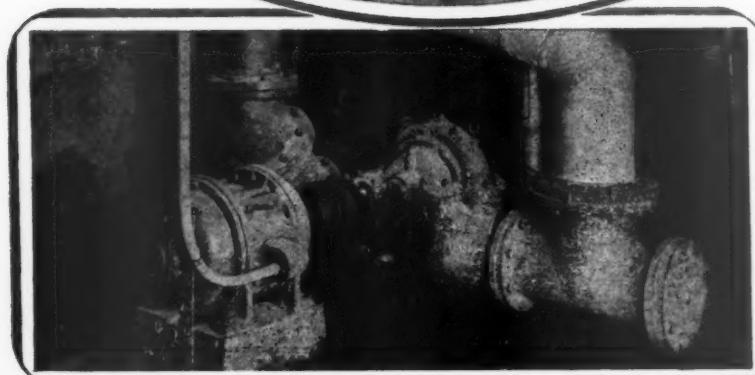


When writing to BELOIT IRON WORKS please mention PACIFIC PULP & PAPER INDUSTRY

G-E General Purpose Motors



Five 250-hp., 450-r.p.m. synchronous motors driving jordans at Longview Fiber Co. Fifty-kilowatt exciter set in foreground



Ten-horsepower, 1160-r.p.m. G-E motor driving stock pump at Beckett Paper Co., Hamilton, Ohio



Three of six 25-hp. motors, each driving a group of 5 deckers at Canadian International Paper Company. G-E meters, switches, and drum controllers for the 6 motors shown in background

Apply the proper G-E motor and the correct G-E controller to a specific task, following the recommendations of G-E specialists in electric drive, and you have G-E Motorized Power. Built in or otherwise connected to all types of industrial machines, G-E Motorized Power provides lasting assurance that you have purchased the best.



Motorized Power
-fitted to every need

G E N E R A L
GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y.

When writing to GENERAL ELECTRIC Co. please mention PACIFIC PULP AND PAPER INDUSTRY

For Paper-Mill Drives

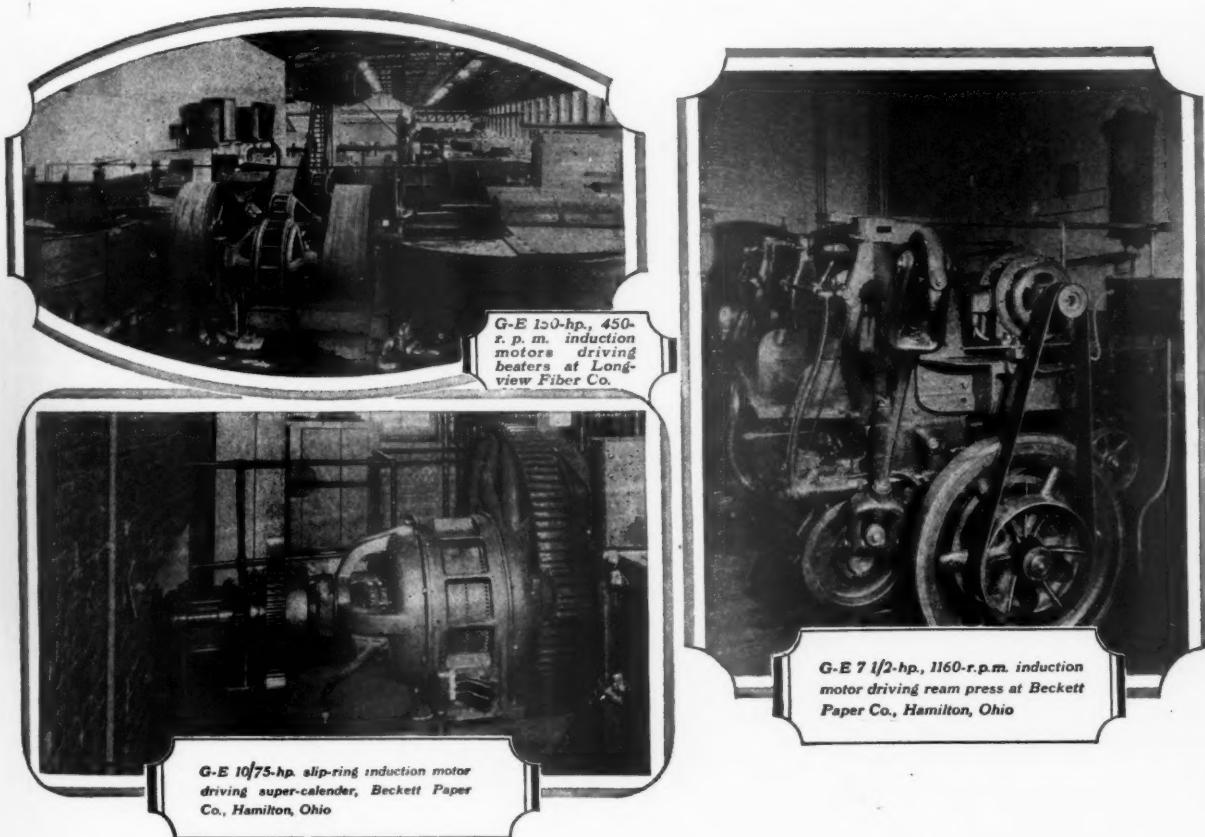
What are general-purpose motors?

They are motors of standard design and construction. They are fitted for the usual—the ordinary—jobs, where special characteristics are unnecessary.

Sectional and grinder drives are important equipment, but they are a small part of the total horsepower of a mill. By far the great majority of paper-mill machines can use standard electric drive.

The lower price of general-purpose motors recommends them for every application where their characteristics are suitable. G-E general-purpose motors are further distinguished by exceptional mechanical construction and electrical characteristics, low operating costs, and all the refinements that constant effort toward improvement can provide.

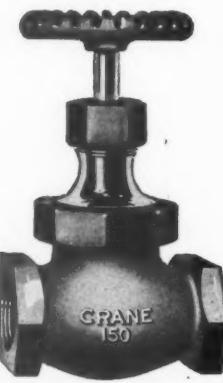
G-E paper-mill specialists are always ready to give you complete advice on the proper selection and application of motors and control —general-purpose or special—for your paper-mill machines.



E L E C T R I C
SALES OFFICES IN PRINCIPAL CITIES

150 Pounds
Pressure

CRANE VALVES

2500 Pounds
PressureWedge Gate Valve No. 465.
Crane makes gate valves of
every type.Oil Separator 03. Crane
separators keep steam
dry and clean.Brass Globe Valve No. 7.
A many-purpose valve.Three Valve Lifting Trap.
Prevents waste of steam
and water.

Multiplying paper mill output by seventeen

In a span of forty-eight years, the paper industry has multiplied its output by seventeen. Faced with a phenomenally increasing demand, it has penetrated to virgin forests, worked out new processes, pioneered in a hundred departments to speed up production. It is significant of the sound efficiency of the industry that this greater production has been attained with an increase of less than one tenth in the number of plants—in other words through larger mills and modern power development.

Pioneering in its field, as the paper indus-

try has in its own, Crane Co. has made a distinct and far reaching contribution to the development, control, and utilization of power. It has developed valves and fittings to withstand highest pressures and superheat, studied the needs of industry and designed piping materials to meet them, devised steam specialties and other equipment to cut costs.

Now, as it served the infant industry in 1880, Crane Co. is in a position to supply the giant paper industry with piping materials for every need.

CRANE

Address all inquiries to Crane Co., Chicago

GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVENUE, CHICAGO

Branches and Sales Offices in One Hundred and Sixty-six Cities

National Exhibit Rooms: Chicago, New York, Atlantic City, San Francisco, and Montreal
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CRANE-BENNETT, Ltd., LONDON

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**The Black-Clawson Co.
Hamilton, Ohio**

Established 1873
Export Offices, 15 Park Row, New York

**BUILDERS OF HIGHEST GRADE PAPER AND PULP MILL
MACHINERY. PATENTEES AND SOLE BUILDERS OF
VERTICAL DRYERS AND CHAMPION FOURDRINIERS.**

*Send for your copy of the B-C
Messenger - Of interest to
everyone identified
with the Paper-Making
Industry.*

BLACK-CLAWSON

PAPER AND PULP



MILL MACHINERY

Built with Machine-Tool Accuracy

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Carthage Chip Crushers

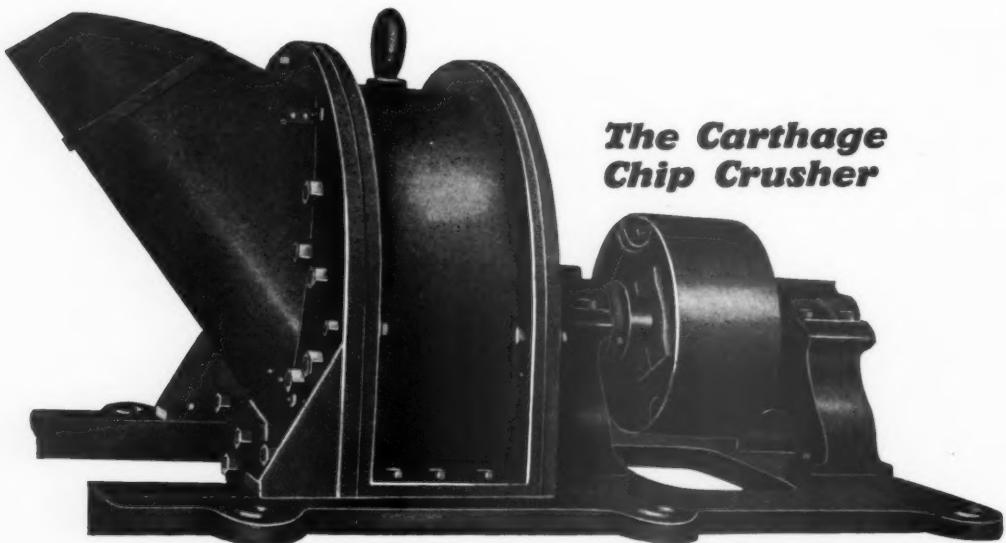
Eliminate Sawdust and Needles

Pass your chip screen rejections through a Carthage Chip Crusher.

The Carthage Chip Crusher produces clean chips—which can be directly added to the screened chip pile.

The pins are so spaced that sawdust and needles are eliminated. Simplicity of construction and easy accessibility make Carthage Crushers inexpensive as regards operation or maintenance.

Ask for Bulletin and list of Pacific Coast installations.



Carthage Machine Company

Carthage, N. Y., U.S.A.

Belleville, Ont., Canada

Founded 1894

SHARTLE BULL DOG

FILLINGS

You know that Shartle Bulldog Jordan filling will stand up under harder service than any other make of filling on the market.

You should also know that it is far easier to "shove in" a Bulldog filling than it is to "build in" fillings of other makes.

If you use bronze and have trouble with specks in your paper, remember that there is no steel used in the building of Bulldog fillings so there can be no specks in your sheet from this cause.

What's more, Bulldog fillings are adjustable to the variations in size of different Jordan shells.

And don't forget that there is salvage value to "Bulldog" that you don't have with other kinds.

SEND FOR YOUR COPY
OF THE SHARTLE "MESSENDER"
IT'S OF REAL INTEREST TO EVERYONE
CONNECTED WITH THE PAPER MAKING INDU-
STRY. PUBLISHED MONTHLY - IF YOU'RE NOT
GETTING IT EVERY MONTH
WE WILL BE GLAD TO
PUT YOU ON OUR
MAILING LIST.



Shartle Bros. Machine Company
Middletown, Ohio

SHARTLE BROTHERS
DIVISION OF THE BLACK-CLAWSON COMPANY

Paper Mill Machinery

When writing to SHARTLE BROS. MACHINE CO. please mention PACIFIC PULP AND PAPER INDUSTRY

LOOK SOUTH

BASTROP, Louisiana: "Gator-Hide Kraft" four big machines, and Dilts New Type beating engines.

CAMDEN, Arkansas: [International Paper Co.] Two 212-inch Kraft Machines, and Dilts New Type Beaters.

HODGE, Louisiana: [Advance Bag Co.] Widest machine in the United States, 242-inch on Kraft, and Dilts New Type Beaters.

TUSCALOOSA, Alabama: [E-Z Opener Bag Co.] 230-inch Kraft Machine, and Dilts New Type Beaters.

*"Your paper is made
in your Beaters."*

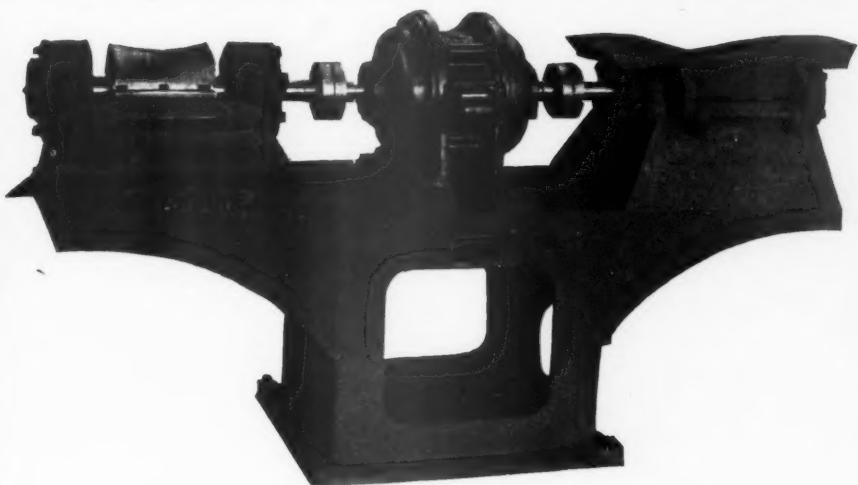
Dilts
MACHINE WORKS, Inc. FULTON, N.Y.
EXPORT OFFICE ~ 15 PARK ROW ~ NEW YORK CITY

ONE OF THE 36 PAPER MACHINERY MANUFACTURERS THAT
USES **SKF** BEARINGS AS REGULAR EQUIPMENT

HESSE-ERSTED IRON WORKS

Nothing is
apt to cost
so much as
a bearing
that cost
so little

You men who plan, build,
use or pay for machines of
any kind, remember this:
It costs more to replace a
poor bearing than to buy the
best one that **SKF** ever
produced. AND **SKF**
ANTI-FRICTION
BEARINGS ARE THE
HIGHEST PRICED IN
THE WORLD.



*Just a Twist of the Hand Spins Concave Head Barker on **SKF** Bearings*

A SINGLE 5 H. P. motor turning at 3600 R. P. M. is sufficient
to drive this double concave head barker built by the
Hesse-Ersted Iron Works. And the reason why this small
amount of power does the work efficiently is due in large
measure to the use of **SKF** Ball Bearings on both motor
and barkers.

So easily do **SKF** Bearings run that the entire rig can be
rotated without effort by a slight twist of the hand. In addition
to saving power, **SKF** Bearings maintain settings of knives
and eliminate motor trouble due to bearing wear. **SKF** Bearings
show hardly a trace of wear in the hardest service and—
never require any adjustments.

2109

SKF Industries of California, Inc.

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Portland, Oregon

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SKF

The Highest Priced Bearings in the World





Use Filters

.... they provide not only lower operating costs but improved operations all along the line

American Disc Type and Oliver Drum Type Filters are widely used as

Groundwood Deckers
Sulphite Deckers
Pulp Deckers
Kraft Washers
Bleach Washers
Save-Alls
Lime Mud Washers
Board Machines

UNQUESTIONABLY filtration is one of the most advantageous steps taken in recent years by pulp and paper makers.

Operating costs are lower because of more efficient deckering, washing, and fiber recovery. Costs are lower because maintenance is lower. They are lower because labor charges are less.

Operating conditions are improved because filters permit a closer control of

stock consistencies. Filters permit more flexible operations, such as bleeding the mill of surplus water without fiber loss during the warm months. Filters help to make a better sheet by retaining in the stock the fine fibers.

Extensive operations of filters installed by Oliver United have provided a fund of data. All of it points to the undeniable fact that filters have proven their worth to paper and pulp mills.

OLIVER UNITED FILTERS INC.

Successor to Oliver Continuous Filter Co. and United Filters Corporation

FACTORIES—OAKLAND, CAL.—HAZLETON, PA.

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Leading Manufacturers of Elevating, Conveying, and Power Transmission Chains and Machinery

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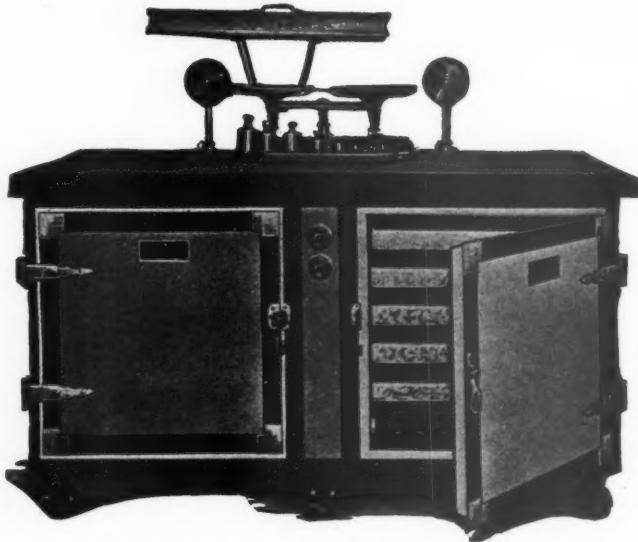
LINK-BELT

When writing to LINK-BELT COMPANY please mention PACIFIC PULP AND PAPER INDUSTRY

*Accurate Equipment for Testing the Moisture of Your
Pulp Will Save You Thousands of Dollars*

THE WILLIAMS STANDARD PULP TESTING OUTFIT

Conforms in every detail with the Official Method for the Sampling and Testing of Pulp as approved by the Technical Association of the American Pulp and Paper Industry, the Canadian Pulp and Paper Industry, the American Woodpulp Importers Association, etc.



*New Horizontal Model
Work-Table Top, Separate Compartments, Quicker Drying*

FEATURES

OVEN—Double walled, electrically heated, with thermostat control.

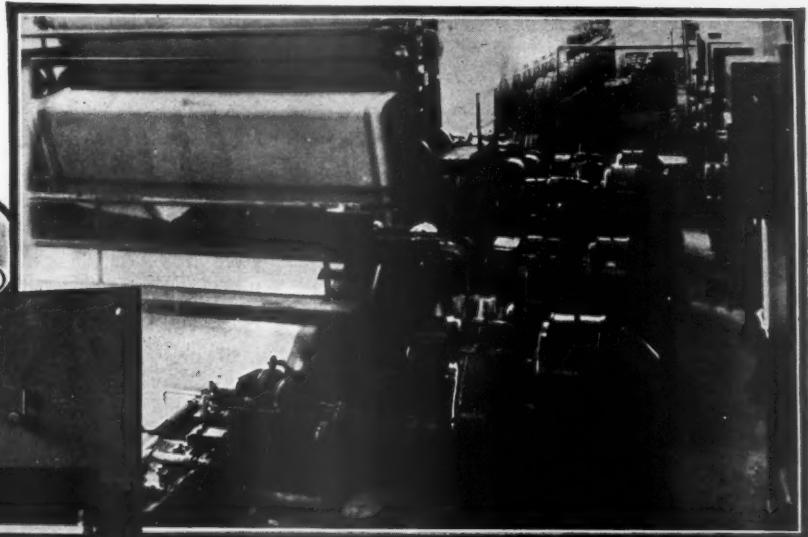
SAMPLE TRAYS—Removable for weighing hot samples while covered.

THERMOMETERS—High grade six-inch dial form, one in each compartment.

SCALES—Accurate balances with brass weights, counterpoised tray holder and cover.

It will pay you to write today

THE WILLIAMS APPARATUS CO., Park Place, Watertown, N.Y.



A NEW Voltage Regulator for Sectional Paper Machine Drive

THIS regulator has stable characteristics, is simple in design, eliminates all necessity for skilled attendants, and assures steady, dependable operation of the entire paper machine.

There are no contacts to renew, clean or adjust. There are no vibrating parts, and there is nothing to get out of order. Developed and applied by Westinghouse with full consideration of the exacting requirements for keeping constant voltage, the Carbon Pile type of

Voltage Regulator offers unusual operating and maintenance economies.

Furthermore, production is increased, costly delays are prevented, and uninterrupted service is assured. This regulator not only maintains constant voltage at all times, but stabilizes the entire drive with precision and exactness.

Write our nearest district office and get the complete story of this regulator, as well as the many other advantages of Westinghouse Sectional Paper Machine Drive.

Westinghouse Electric & Manufacturing Company
East Pittsburgh
Pennsylvania
Sales Offices in All Principal Cities of
the United States and Foreign Countries

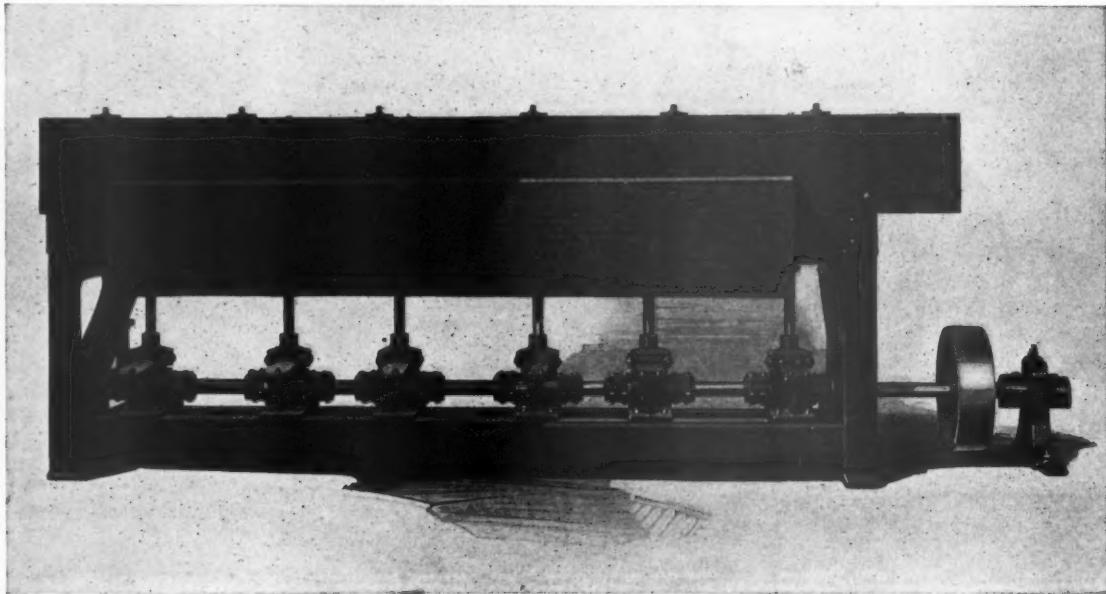
Westinghouse

When writing to WESTINGHOUSE ELEC. & MFG. Co. please mention PACIFIC PULP & PAPER INDUSTRY

The Inclined Harmon Screen is Manufactured Exclusively by the Bagley and Sewall Company

LEVEL AND INCLINED TYPES *of* HARMON SCREENS

Maximum Capacity — Clean Stock — Less Power



View of Flat Type Screen

We are prepared to give service on orders received for these screens and can make prompt deliveries on screens and parts.

— Bulletins on Request —

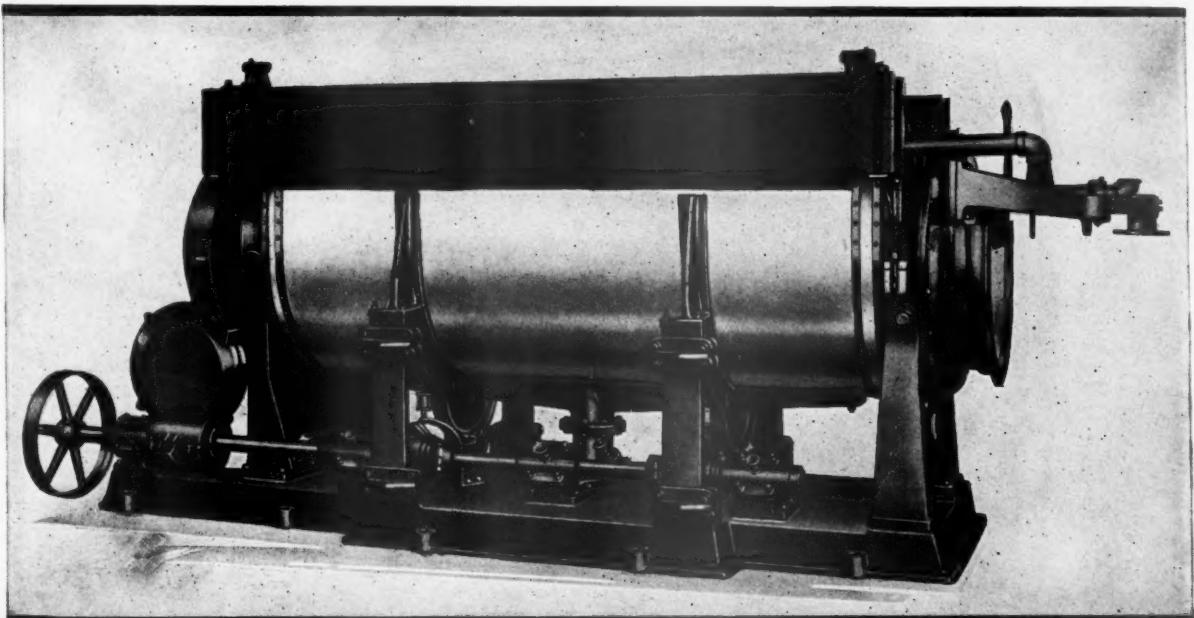


The BAGLEY and SEWALL CO.
WATERTOWN — NEW YORK
1823 — 1928

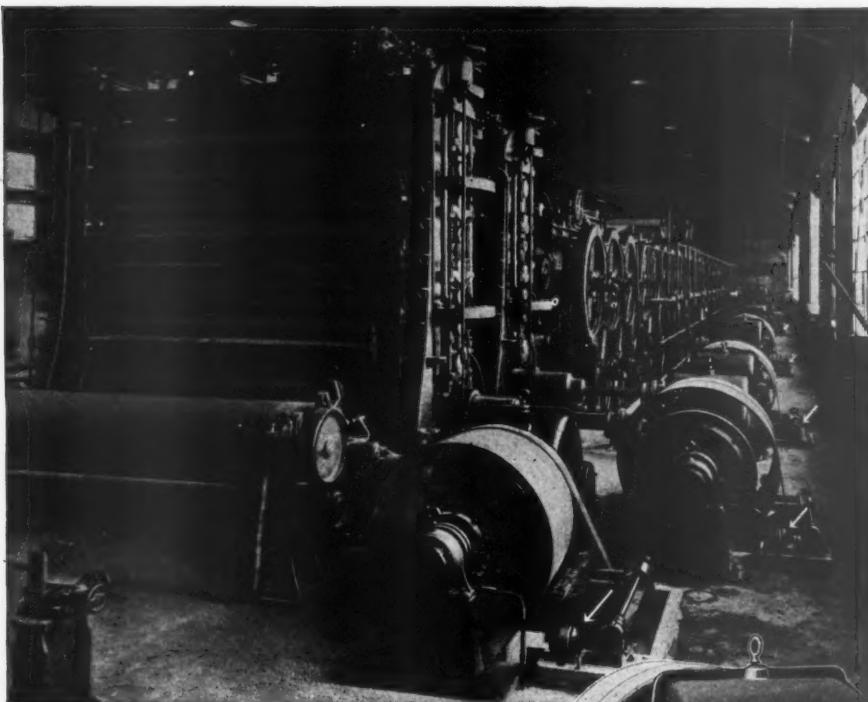
You
can make
more and
better paper
at lower cost
with

Bird Screens

Twenty odd thousand tons of paper pass through Bird Screens daily



BIRD MACHINE COMPANY ~ South Walpole, Massachusetts

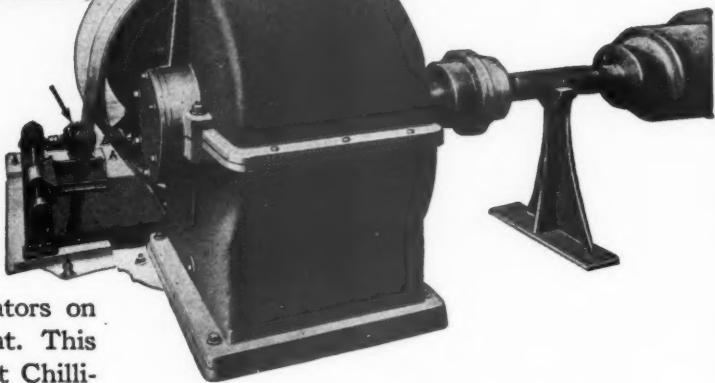


Arrows point to Motors operating the Belt Shifters. Frontside electric control throughout—even the Frossard Calender Doctors controlled by solenoids.

Back view showing gear housing. Unit mounting with permanent alignment, spiral bevel gears running in oil, anti-friction bearings—these are a few of the features that mean less noise and trouble, with better and greater production.

New DRIVES at Chillicothe with Remote Control

ARROWS  indicate motor actuators on Belt Shifters controlled from the front. This new 154-inch Rice-Barton Machine at Chillicothe Paper Company contains many of our recent improvements. The power drive in the foreground has spiral bevel gears running in oil, leak-proof casings, anti-friction bearings, magnetic clutch, and unit mounting with positive shaft alignment.



Stacks have motor driven lift screws and solenoid controlled Frossard Doctors.

At the wet end a new removable, adjustable, shaking Fourdrinier that is built for greater speed and better sheets, and easier and quicker changes.

Write for full particulars—we are glad to tell you about this latest paper machine.

Removable, Adjustable, Shaking

FOURDRINIERS

When writing to RICE, BARTON & FALES, INC., please mention PACIFIC PULP AND PAPER INDUSTRY

RICE
BARTON
& FALES
INC.
WORCESTER
MASSACHUSETTS

DU PONT *Dyestuffs*

DU PONT *Quinoline Yellow Conc.*

Du Pont Quinoline Yellow Conc. produces bright canary and lemon shades which are very fast to light. It possesses excellent solubility and works well as a calender color. In the dipping of plain and crepe tissues, where greenish yellow shades are desired, the brilliance of du Pont Quinoline Yellow Conc. is unsurpassed.

With one of our branch offices strategically located on the west coast, we are able to offer you prompt delivery from warehouse stocks and technical assistance on application problems.

E. I. DU PONT DE NEMOURS & CO., Inc.

Dyestuffs Department

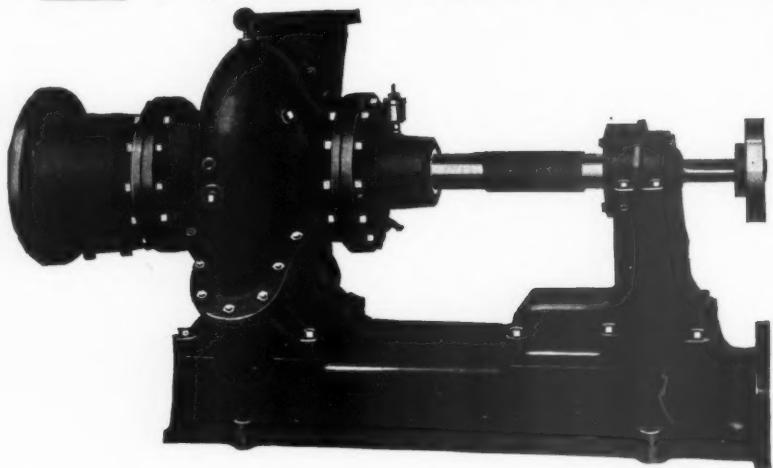
Wilmington, Delaware



San Francisco Branch Office:
569 Mission Street

Non-Clogging!

Does not separate liquids from solids



The Fairbanks-Morse Paper Stock Pump

is the most dependable
unit yet devised for
pumping liquids with
suspended solids!

We will gladly give you proof

FAIRBANKS, MORSE & CO., Chicago

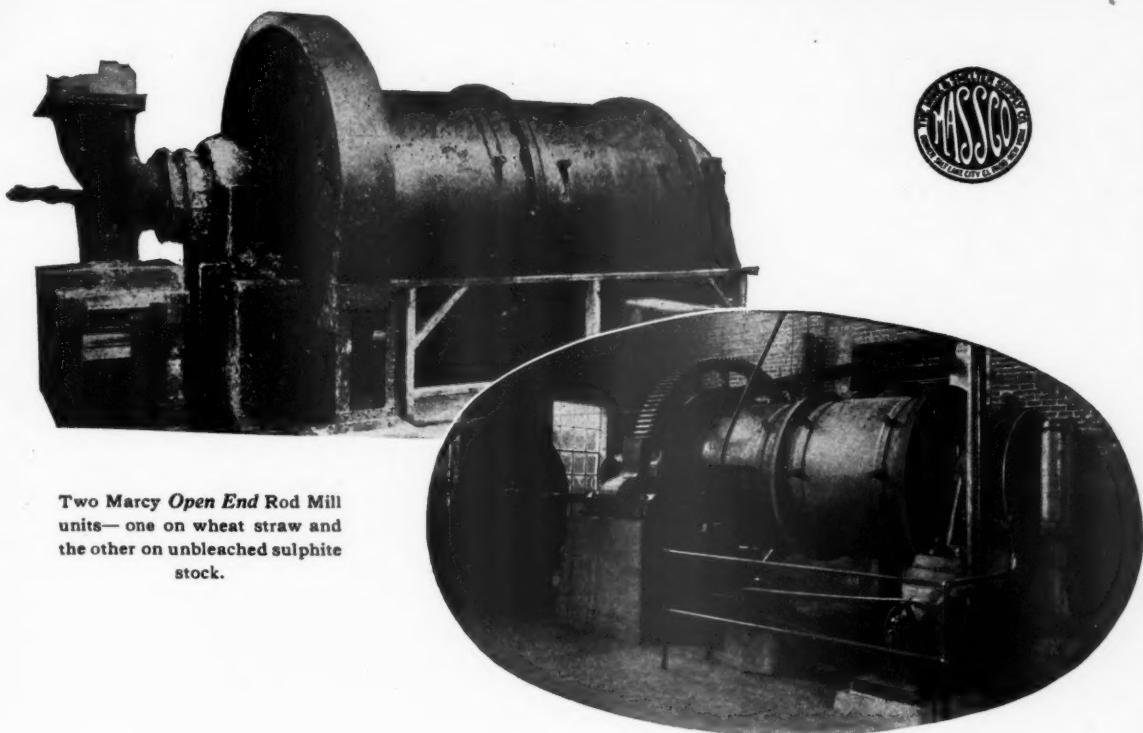
28 branches at your service throughout the United States

Los Angeles, Calif.—423 East Third St. Seattle, Wash.—550 First Ave. S.
San Francisco, Calif.—Spear and Harrison Sts. Spokane, Wash.—518 East First Ave.
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Tacoma, Wash.—432 Perkins Bldg.

FAIRBANKS — MORSE
SCALES — MOTORS — PUMPS — DIESEL ENGINES

APAI8.16

When writing to FAIRBANKS-MORSE please mention PACIFIC PULP AND PAPER INDUSTRY



Two Marcy *Open End* Rod Mill units—one on wheat straw and the other on unbleached sulphite stock.

Avoid Excessive Hydration By Shortening the Beating Period

PROLONGED beating of long fibered pulps automatically involves excessive hydration. Yet to introduce too sharp a beating action would cause excessive cutting of fibers.

Both of these undesirable results can be avoided by making use of this new process of beating and refining by rods—a process so effectively carried on by the Marcy *Open End* Rod Mill.

For instance, tests show that a 7'x15' Marcy Mill, handling 25 tons per 24 hours, will pass the pulp through in 20 minutes and give it a quality equal to that obtained by 7 to 8 hours treatment in ordinary beaters.

Thus, two desirable results are obtained — suitable fibers with minimum hydration. And these are obtained most efficiently in the Marcy *Open End* Rod Mill.



Send for our
new illustrated
Bulletin No. 75

**The MINE and SMELTER
SUPPLY COMPANY**

Licensee under the Marcy Rod Mill Patents

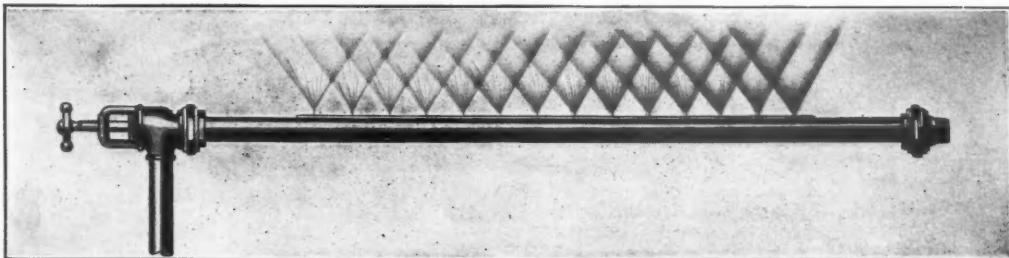
DENVER

NEW YORK

Manufactured in Canada by William Hamilton Limited,
Peterborough, Ontario

PAPER MILL MACHINERY

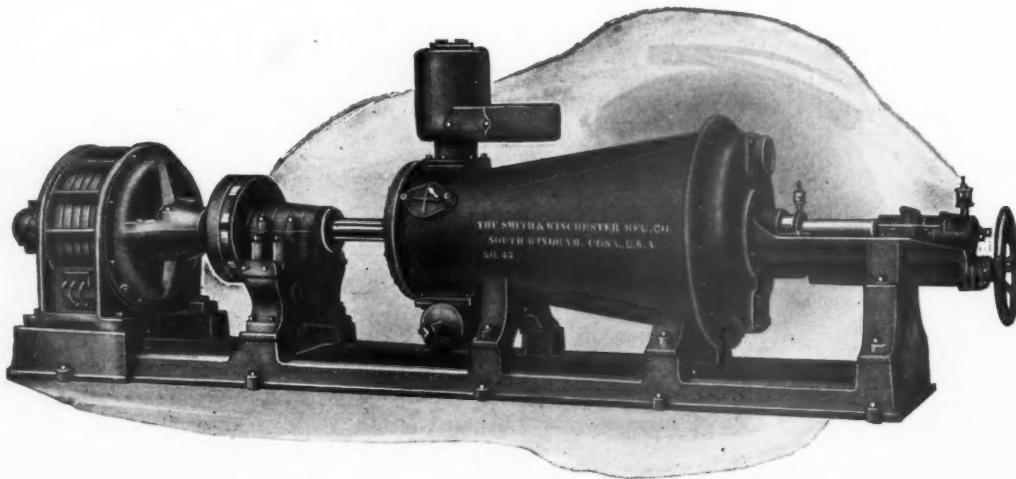
FOURDRINIER—CYLINDER—WET MACHINES



The Rainstorm Shower Pipe

The Undercut Trimmer

PAPER BAG MAKING MACHINERY



The Smith and Winchester Model 40 Jordan Engine

—ESTABLISHED 1828—

The Smith & Winchester Mfg. Co.

Dept. MFP.

SOUTH WINDHAM, CONN.

SUMNER DISC CHIPPERS

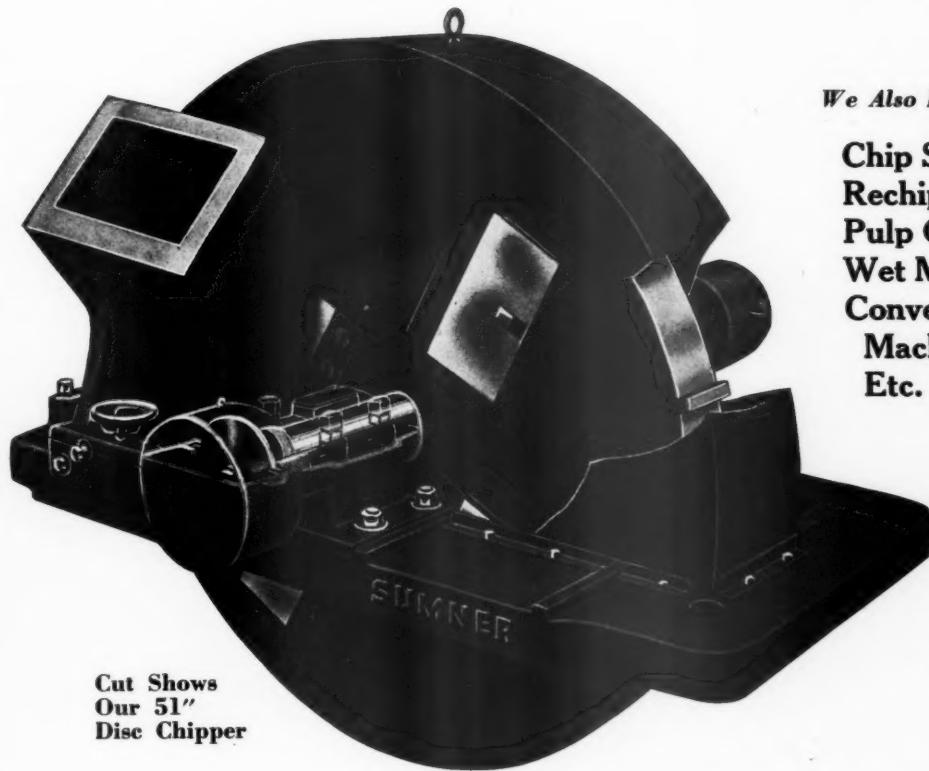
Are sturdy and efficient with Extra Heavy Cast Iron Frame or Bed.

All Cast Steel Disc instead of Cast Iron Banded.

Special arbor boxes with either friction or roller bearings, designed to prevent leakage of oil on chips.

Cast Iron Spouts designed to suit wood.

Avoid changes of expensive delays and shut downs by buying for Western Industries Western-built Machinery.



Cut Shows
Our 51"
Disc Chipper

We Also Build:

**Chip Screens
Rechippers
Pulp Grinders
Wet Machines
Conveying
Machinery
Etc.**

Let us figure on your requirements

SUMNER IRON WORKS

Factory: EVERETT, WASH.

TACOMA — Sales Office — EVERETT

Canadian Shops: VANCOUVER, B. C.

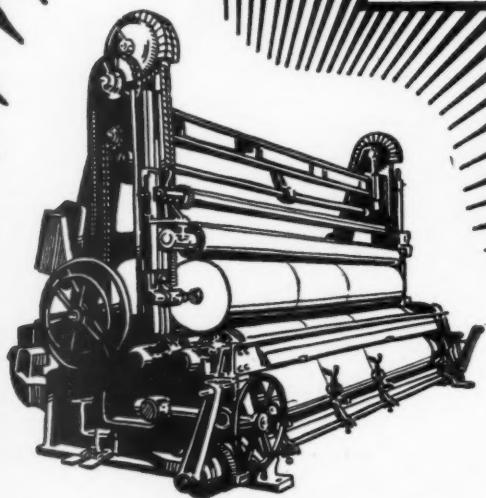
CAMACHINE

THE importance of the roll-winding operation definitely fixes the status of the Roll-Winder as an important piece of equipment in paper and board mills.

On the Roll-Winder depends whether due credit is done to all of the care and skill in bringing the web up to the reels. Good paper when wound into good rolls leaves nothing to regret, but the best of paper in poorly wound rolls serves to invite dissatisfaction.

*CAMACHINES are
Good Roll Winders*

CAMERON MACHINE COMPANY
61 Poplar Street, Brooklyn, New York, U. S. A.



-WN-

Mill Motors that help to Buy Themselves

While eliminating all possible friction, Timken Tapered Roller Bearings eliminate many other former causes of high cost in mill motor operation. The Timken-equipped mill motor has more than easy, safe starting, infrequent need for lubrication, and an improved power factor made possible by excellent anti-friction properties.

It has the full thrust capacity, the compact load carrying area, the clean, snug bearing closure made possible only by Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS*, and Timken electric steel. Here is the basis of Timken endurance, with which to avoid shutdowns—that one great cause of excessive costs.

Timken endurance adds so many extra years of lowest motor operating costs that it often proves sound to discard obsolescent motors at once, in favor of modern Timken-equipped types. Consult Timken or your motor manufacturers.

THE TIMKEN ROLLER BEARING CO., CANTON, O.

The armature mounting of Timken-equipped mill motors requires no alteration, regardless of the type of drive or the position in which the motor may be operated.

TIMKEN *Tapered Roller* BEARINGS

When writing THE TIMKEN ROLLER BEARING CO., please mention PACIFIC PULP AND PAPER INDUSTRY.

KENWOOD TANNED FELTS

For Specialized Conditions



For the mill whose product is largely of a special or unusual character, the selection of felts becomes a matter of extreme importance, requiring close and accurate study of conditions.

Many such mills have demonstrated, over a long period of time, that best results are secured through the use of KENWOOD Felts.

The Kenwood Patented TANNING Processes have added further advantages to the basically sound design of Kenwood Special Felts.

KENWOOD RESEARCH A FURTHER AID TO THE MILL

No condition is so complicated or specialized but what Kenwood Research Service can aid the mill in meeting extraordinary felt requirements.

F. C. HUYCK & SONS

KENWOOD MILLS, ALBANY, NEW YORK
KENWOOD MILLS LTD., ARNPRIOR, ONTARIO

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How About the Forest Reserves?

The Pulp Industry Will Have No Guarantee of the Future if the Logger and His Wrecking Crew Are Permitted to "Mine" the Government Forests

OME day in the future the growing pulp and paper industry of the Pacific Coast will find it necessary to draw upon the timber in the U. S. Forest Reserves. What assurance has the industry that any pulpwood will be available in these reserves when that day comes? How can the industry be certain that the high-powered logger with his big machines will not have gone before, skinning out the prime logs and laying a wake of ruined pulpwood?

The outsider who witnesses Pacific Coast logging for the first time is invariably impressed with the wholesale destruction which accompanies the operations. Sizeable trees that would be cherished in another land are pulled down, broken, destroyed and left to rot in the woods, converted forever into a shameful economic loss.

The logger offers many reasons to justify his methods. Our large Pacific Coast trees demand large machinery, and large machinery demands mass production or it will eat itself up in overhead. One can't afford to handle toothpicks. Neither can one afford to bring out logs of the less desirable species when the price received is frequently less than the cost of getting them out. The market isn't there for white fir, Sitka spruce and Western Hemlock. In the loggers' parlance these trees are weeds that stand in the way of getting out the Douglas fir and cedar.

And taxation on growing timber. Who ever heard of taxing the farmer every week on his crop of wheat which is harvested once a year? Yet the equivalent of such treatment is the lot of the holder of timber lands in the Pacific States. Cash, cash, he must have cash to meet the ever-recurring demands for taxes on his standing timber, his long-time crop which brings no revenue except at cutting time. Frequently he must cut to avoid further taxes or to get cash to save other parts of his timber realm against the day of better prices, which never seem to come.

The lot of the logger might seem to lie between the devil and deep sea. It is small wonder that logs continue to flow to the lumber mills, that the mills continue to cut and cut and cut, to dump more and more of their product upon a lumber market which has been demoralized for years. Further, there has been a great lack of cooperation in the lumber industry, a situation which certainly has done nothing toward improving the situation.

But how about the Pacific Coast in general? Is it to stand idly by and see one of its most valuable resources dissipated without regard to the future when a great bulk of its business life rests squarely upon timber. The Coast's interest lies in seeing to it that as nearly as possible 100 per cent of the value of its forests is secured. Surely no honest mind is willing to concede that present wasteful logging methods are bringing the maximum of possible wealth to the Coast.

It will be argued by some that nothing can be done about it. Such a view can not be tolerated for a moment. No situation is so hopeless that it is incapable of betterment when fearless men are willing to tackle it.

The growing pulp industry on the Pacific Coast injects a new element into the picture. Here is an industry which has attained a growth that entitles it to a voice in the meeting. It is no longer a youngster. It can, and does, make use of much of the very kind of timber which is now being destroyed in ordinary logging operations. The paper mill returns many times as many dollars as the logger for every tree used. The pulp and paper industry pours its millions into a community and stays there, builds up a permanent community instead of a temporary camp. In its wake follow homes, schools, a business life that lives, not merely pauses and moves on again as the timber about it is cleaned out. The very character of the industry,

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because of the large investments involved, demands permanence and assurance of the future.

The pulp and paper industry is therefore vitally concerned with what the future holds. It can not afford to sit on the sidelines without protest. It may be powerless to control logging methods on private lands. It may even be forced to watch, without raising a hand, the forests disappear on all except its own holdings. When it comes to the U. S. Forest Reserves, however, it can raise a voice that demands attention. The reserves are the property of all the people, demanding administration that will not only insure a future pulp-wood supply, but insure to the people the maximum return from its natural resources.

The pulp and paper industry can, and will, demand that our present day system of "mining" timber end at the forest boundary. In the reserve the logger will have no plea that taxes press him for cash to force premature and unprofitable cutting. The forest administration can, and will, insist that when the axe does cross the forest boundary that it sweeps clean and puts 100 per cent of the wood to use.

Local conditions will, of course, alter the general policy slightly. The borders of our reserves in many cases are badly broken up by alternate sections of government and privately owned timber. Forestry officials have no say in the time and manner in which a private holder shall log his lands and it is not good business to leave small isolated parcels of timber standing, due to the increased danger of loss through fire, blowdown, etc. The general practice has been, therefore, to let the logger sweep up these reserve odd lots in his own fashion, wasteful as it is, as he logs adjoining sections.

When it comes to the main stand, however, the iron rule of complete utilization will prevail. Here the pulp and paper industry must demand that due consideration be made of its heavy and permanent investments. Why emphasize this policy now? Because, if our present day loggers are made to understand without equivocation that they will not be permitted to move their rigs into the forest reserves when they have laid waste their own holdings they will be forced to give some thought to conserving what they now have.

St. Helens Mill Buys California Bag & Paper Co.

Directors of the St. Helens Pulp & Paper Co., at St. Helens, Oregon, have authorized the purchase of the California Bag & Paper Co., at Emeryville, Calif. According to Mr. W. P. Hawley, Jr., vice-president of the St. Helens company, who made the announcement, the deal would be consummated and the factory taken over as of September 15, 1928. A new plant will be built at St. Helens.

"We will immediately commence erection of one of the largest and most modern bag factories on the Pacific Coast," Mr. Hawley stated in making the announcement. "The buildings are to be of steel and concrete. The capacity of the factory will be 3,000,000 bags per eight hours. There will be no interruption in the production of or delivery of bags to our customers. This new factory will produce a very complete line of bags, including grocery, milliner, glassine, etc., and also plain, printed and fancy bags. As we are already producing a complete line of cement bags, the new production will give us the most complete paper bag plant on the Pacific Coast."

The present plant of the California Bag & Paper Co. at Emeryville, Calif., will be abandoned, Mr. Hawley stated. The new plant will be built adjoining the St.

Helens mill and will contain about 90,000 square feet of space. Dimensions of the structure were not given, although it was said that provision would be made for adding another story to the building later if such procedure was warranted. The business of the California plant has expanded rapidly in the past year and one-half, it is said. The bag plant has been using St. Helens kraft and the new move will bring the converting plant directly to the source of a principal supply.

Production will not be interrupted at Emeryville, but upon completion of the structure at St. Helens the California factory will be dismantled and rushed to the Oregon city. The new factory will create a new payroll of about \$150,000 annually at St. Helens.

The move will not affect the status of the Jaite Bag Co. which established a cement bag factory in connection with the St. Helens mill earlier this year.

The move is in line with the several continuously progressive steps taken by the Hawley interests in the past few years. The St. Helens Pulp & Paper Co. completed its new 60-ton kraft pulp and paper plant in December 1926 and began production at that time. Mr. W. P. Hawley, Sr., who is president of both the St. Helens company and the Hawley Pulp & Paper Co. at Oregon City, Oregon, is one of the veteran paper makers on the Coast. Mr. Hawley, Jr., is vice-president of both companies. The Hawley mill at Oregon City completed early in 1928 a large program which included the building of a new and thoroughly modern electric ground-wood mill and the installation of a new 242-inch newsprint machine.

Mr. Max Oberdorfer is general manager of the St. Helens mill.

Union Bag Plant Nearly Complete

Construction work is rapidly drawing toward a close on the new \$2,200,000 sulphate pulp mill of the Union Bag & Paper Power Corp. at Tacoma. Virtually all of the equipment is now in place and much of the installation work has been completed. Indications are that the mill will get into operation about the first of November. President C. R. McMillen and vice-president E. B. Murray are expected to visit Tacoma in the next month or so to be on hand when the mill goes into operation.

The completed mill will represent the highest type of building construction and will have incorporated in it many new engineering features. The present unit is being built to permit future expansion to a capacity of 300 tons per day or more.

The new all-electric Hemlock saw mill of the St. Paul & Tacoma Lumber Co. which adjoins the Union Bag pulp mill has now been in operation for several weeks and a reserve supply of waste wood from this mill is already beginning to accumulate. The wood from the saw mill will pass on a conveyor to sorting tables and be directed to barking drums, chippers, or hog fuel machines. The large burner which is now being used to dispose of some of the wood refuse will be virtually eliminated when the pulp mill goes into operation. The completed unit will represent a forward step on the Pacific Coast toward the intergration of wood using industries.

Lubersky Returns From Eastern Trip

I. Lubersky of the Portland division of Fibreboard Products, Inc., returned early this month from a business trip to St. Paul, Minnesota. Mr. Lubersky is head of the sales promotion department for the local division.

Objectives of the Pulp and Paper Conference

Will Seek Co-ordination of Industrial, Educational and Research Institutions

By H. K. BENSON

Professor of Chemical Engineering in the University of Washington
Chairman of the Executive Committee in Charge of the Conference

THE growth of the pulp and paper industry on the Pacific Coast is evidenced by the very substantial increase in mills now operating or under construction. As a consequence a large number of experienced technical men and executives are assembling in the Pacific Northwest. The suggestion has been made that it would be both pleasant and profitable for the representatives of this industry to meet in conference and to consider the possibility of forming a permanent organization on the Pacific Coast similar to those in the East and in which many of the Coast men hold membership.

The University of Washington, through its technical courses, is also greatly interested in this industry, both in the matter of training men for service in the industry and of familiarizing itself with the technical and research problems of the industry. It is felt that mutual benefits may accrue from a gathering on the University campus for a discussion of the co-operation of the industry with the educational and research institutions of the country. It is hoped that the invitation from the University for the representatives of the industry to meet on the campus will not be considered presumptuous and the writer wishes to assure all that the motives for calling the conference are responsive to the hope that some form of permanent organization may spontaneously result from the meeting.

President M. L. Spencer of the University has invited the following to act as an executive committee in charge of the conference: Dean Vernon MacKenzie of the School of Journalism; Professor B. L. Grondal of the College of Forestry; Mr. A. H. B. Jordan of the Everett Pulp & Paper Co.; Mr. O. C. Schoenwerk of the Washington Pulp & Paper Corp. and affiliated companies; and the writer, who has been designated as chairman. The date for the conference has been set for October 26.

Inland Empire Contemplates Expansion

The annual meeting of the Inland Empire Paper Co. at Millwood, Washington, was held late in August and it was voted at that time to carry on the planning which has been under consideration looking toward the eventual doubling of capacity of the present mill. An official statement issued following the meeting reads:

"The management was instructed to complete plans and specifications for the modern high-speed paper machine which has been under consideration to double the paper output of the mill."

The information is given out that the present action merely authorizes continuance of planning and is not to be interpreted that an immediate enlargement program is contemplated. The company has for some time had an enlargement program under general consideration as part of a long-time program. It has been studying possibilities of further power development in the Spokane river.

The old board of trustees and officers were elected.

The program is now in process of formation, but is not sufficiently definite to be announced at this writing. It is planned to hold the meetings in Anderson Hall, the home of the College of Forestry. The forenoon session will be contributed largely by speakers from co-operating institutions. Some of the topics that will be discussed are "Reforestation as a Source of Pulpwood", "Taxation in Relation to Reforestation", "Logging Waste", "Sawmill Waste", "Some Experimental Results in Cooking Douglas Fir with Sulphite Acid."

The afternoon session will be given over entirely to the technical men of the industry for the discussion of such topics as may be of special interest. The writer will be glad to receive suggestions for topics and papers for this meeting. It is the intention to have a session similar to the meetings of the Technical Association of the Pulp and Paper Industry.

The evening session will be in the form of a dinner or banquet, over which some genial executive will preside as toastmaster and a number of short addresses will be made on some of the general aspects of the industry. At the conclusion of the evening meeting, if the desire is general, an opportunity will be given to arrange for a permanent organization.

The writer has met with the most hearty promise of support from those with whom he has had preliminary correspondence or conferences and has been assured of a substantial attendance even from the remoter distances. It is hoped that as many of the mills as possible will arrange to send their representatives to the conference and authorize them to engage in such discussions as may be of interest.

The complete program and the cards for dinner reservations will be mailed to all the mills on October 15th, and additional details of the conference will appear in the next number of Pacific Pulp & Paper Industry.

The trustees are L. M. Alexander, J. E. Alexander, Judson G. Rosebush, W. H. Cowles, W. H. Cowles, Jr., W. A. Brazeau and Waldo Rosebush.

Officers are: Judson G. Rosebush, president; L. M. Alexander, vice-president; W. A. Brazeau, secretary and sales manager; and Waldo Rosebush, treasurer and general manager.

President Rosebush is also vice-president of the Nekoosa-Edwards Paper Co. at Port Edwards, Wisc., and Nekoosa, Wisc.; president of the Patten Paper Co., Ltd., and general manager and treasurer of the Northern Paper Mills at Green Bay, Wisc. He took the occasion of the Inland Empire annual meeting also to visit other Pacific Coast points.

Weiler Goes To Toronto Mill

Louis Weiler, identified with the Colorado Paper & Pulp Co. at Denver since the mill was built, has resigned to accept employment with the Dominion Box Works at Toronto.

The Effects of Waste Sulphite Liquor on Early Stages of the Chinook Salmon, and Means of Prevention By Disposal Methods

By H. W. NIGHTINGALE, State Sanitary Engineer
and V. LOOSANOFF, Biological Assistant, Washington State Department of Health

WITH an increasing number of sulphite pulp mills in operation in the state of Washington it has become necessary to control the discharge of the wastes in order to prevent deleterious effects upon fish life in these waters.

To obtain fundamental facts upon which to base a disposal requirement for mills discharging sulphite liquor experiments were carried on during 1928 over a four-months' period. These experiments concerning the effects of sulphite liquor on certain stages of the Chinook salmon were conducted by the Division of Sanitation of the State Department of Health in cooperation with the State Department of Fisheries.

Reviewing briefly previous investigations, it is noted the effect of sulphite liquor on fish life has been observed by M. C. Marsh in Water Supply Paper 192, U. S. Geological Survey, 1907, and in the report on "Stream Pollution in Wisconsin" by the Bureau of Sanitary Engineering, Wisconsin State Board of Health, 1927.

Marsh exposed largemouthed black bass, yellow perch, and brook trout fry to diluted sulphite liquor in open glass jars. Artificial aeration of the diluted liquor was produced. The original density of the sulphite liquor before dilution was 1.028 at 11 degrees C. A dilution of 1 to 50 of this liquor without aeration killed 9 out of 12 brook trout fry in 48 hours; a 1 to 75 dilution killed 10 out of 12 in 113 hours; a 1 to 100 dilution without aeration killed perch in 52 hours; a 1 to 120 dilution without aeration killed bass in 29 hours. With aeration by the method just mentioned a 1 to 100 dilution failed to kill bass in 17 days.

In the Wisconsin report the death of fish in the Flambeau river during 1925 was stated to be caused by a lack of dissolved oxygen resulting partly from the oxygen demand of the sulphite liquor discharged therein. The Wisconsin survey indicates that the use of 2 parts per million of dissolved oxygen, corresponding to 14 to 22 per cent saturation, depending upon whether the temperature is zero degrees or 20 degrees C, re-

spectively, as a critical or very lowest limit for fish life, is therefore considered as the absolute minimum. It was further concluded that the ponding and aeration of the diluted sulphite liquor reduces the oxygen demand 76 to 92 per cent for $\frac{1}{2}$ to 5 day demands. Mechanical aeration by the Bassler spray device reduced the oxygen demand of the diluted (1 to 32) liquor from 34 to 60 per cent for 1 to 5 day demands under experimental conditions.

In the present experiment Chinook salmon—also known as King, Quinault, Tyee, Columbia River and Sacramento salmon—were used. Eggs, fry, and fingerlings were exposed to sulphite liquor. Eggs were obtained from adult fish before the commencement of the experiment. Eyed eggs only were used due to necessity of careful handling. The fry ranged in age from 7, 10, 25, 90, 100 to 110 days old. At the 110-day stage the yolk sac was almost absorbed. The fingerlings were 4 to $5\frac{1}{2}$ months old.

Standard hatchery troughs of the state Department of Fisheries at Auburn were used. These troughs are 14 feet in length, 14 inches wide, 8 inches inside depth and hold approximately 37.5 gallons of water to the flow-line. Hatchery water was admitted in a thin sheet about 4 inches wide at the rate of $2\frac{1}{2}$ gallons per minute to avoid excessive hauling of sulphite liquor to prepare the dilutions. Sulphite liquor of certain densities was introduced in a small stream directly in the center of the sheet of water in order to insure mixing and to avoid aeration. The method was chosen as most closely approximating conditions obtaining in sluggish streams or creeks.

Accurate control on flow of liquor and through water was maintained throughout the experiment. Density of the sulphite liquor was determined by a hydrometer and more accurately by weighing in a pycnometer. Hydrogen concentration was determined by means of the LaMotte standards.

Control troughs were provided in which hatchery water was caused to flow continuously at the rate of

WILL SULPHITE LIQUORS HARM FISH?

AS the pulp industry increases on the Pacific Coast the spectre of stream pollution raises its head more and more frequently. The question, "Will pulp mill discharges harm fish?" is becoming a controversial one between fishing and pulp manufacturing interests. Varied opinions are expressed on the subject, few of which are based on real knowledge of the facts.

This article presents the findings of an accurate study covering several months, seeking an answer to the above question. It represents a search for facts only, without bias in either direction. The findings are of deep import to the Pacific Coast pulp industry, and it is commendable that the Pacific Coast has recognized the problem, initiated scientific study, and undertaken to plot a course for the future, before instead of after possible damage.

One industry should not be sacrificed for the advancement of another. The fisheries to which this Coast is heir are an asset too valuable to be needlessly endangered, for upon their welfare depends to a great extent the welfare of other industries of the district. Pacific Coast fisheries produce more than \$100,000,000 worth of products annually. No wise pulp manufacturer will jeopardize his investment by locating a mill where it is likely to destroy the fisheries.

The accompanying article points out:

That sulphite liquor in certain concentrations is highly destructive to fish life.

That this destructiveness can be eliminated by proper dilution and disposal methods, and proper location of mills.

That a frank recognition and unbiased study of pollution problems by both the pulp and the fishing interests, with a spirit of co-operation between them, will mean profit and progress for both industries and for the Pacific Coast in general.

2½ gallons per minute. One thousand fry of the 7-day stage and an equal number of the 90-day fry were placed in the control troughs on January 31, 1928, at the start of the experiment. When fingerlings became available, 500 were also placed under control. The 2½ gallon rate of water flow is much smaller than ordinarily used in actual hatchery operations.

A series of six experiments was conducted with sulphite liquor equivalent to 1.050 liquor in dilutions of the following ratios: 1/150; 1/200; 1/300; 1/320; 1/400; 1/600. In the first four experiments 500 fry, 7 to 10 days old, and 500 fry, 90 to 110 days old were exposed. In the fifth experiment 500 25-day fry and 500 4 months old fingerlings were exposed, and in the last experiment 300 fingerlings 5½ months old were exposed. Eggs were also exposed to the sulphite liquor for 24-hour and 36-hour periods and later placed in the control troughs with a mortality check made to compare the exposed and the unexposed eggs. The results of these experiments are tabulated in the accompanying tables.

What happened to the eggs, fry and fingerlings in these different experiments was watched with care and set down in detail. There follows in detail the result of one experiment:

Death by Suffocation

In the 1 to 37.5 dilution (1.0125 at 20° C) the dissolved oxygen at the start before introducing the sulphite liquor was 11.9 parts per million, pH 7.6 and water temperature 5.5° C. Within 15 minutes after turning on the liquor the dissolved oxygen dropped to 1.6 p.p.m. It continued to drop until at the end of 4½ hours it reached 0 p.p.m. All of the fry of both stages immediately died when the 0 concentration was reached. The 90-day fry became coated with a white mucus after one hour of exposure. No mucus was visible on the younger fry until 3 hours had elapsed. The fry of both stages became blinded before death. The gills were pale brown to white in color. The heart was brown or pink in some of the older fry. The parr marks disappeared, apparently from chemical action on the scales.

Death was caused by suffocation since large numbers of the fry of both stages died within a few minutes when the dissolved oxygen had dropped to zero at the close of the experiment.

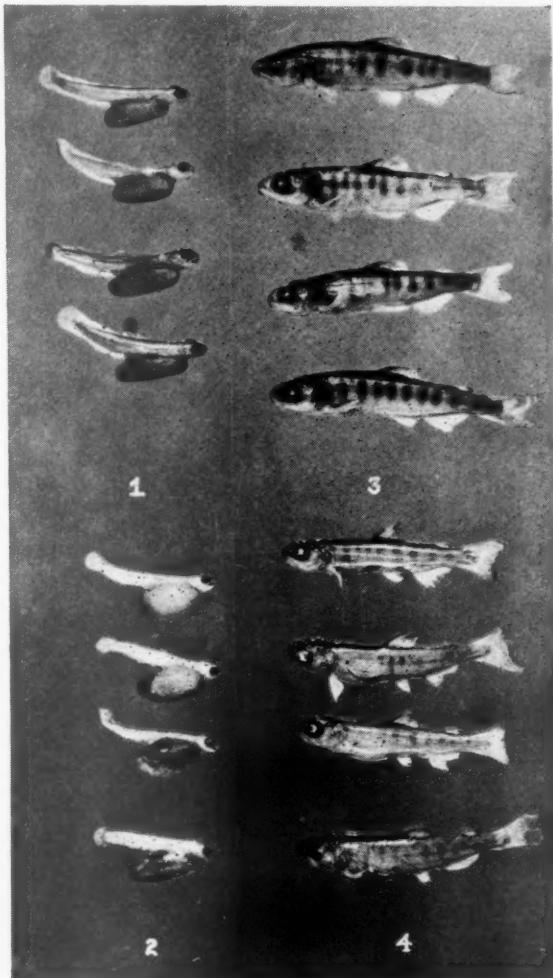
Detrimental to Eggs

Two baskets of eyed Chinook eggs were placed in a control trough at the start of this experiment on February 2, 1928. Five other baskets, each containing 2000 eggs, were exposed to the 1 to 37.5 sulphite liquor dilution for periods of 24 to 36 hours respectively. At the end of each period two baskets were transferred to the control trough for further development. The accompanying table shows the result of exposure. Eggs in the control trough began to hatch between February 24 and 28 and on March 1 nearly 100% had developed. The eggs exposed for 24 hours developed slowly, and on February 28 the first five eggs hatched. By March 1 only 23 fry were developed from the 24-hour basket and 5 in the 36-hour basket. The remainder failed to develop. The fry from both the 24-hour and the 36-hour baskets showed signs of abnormality. In some cases the body of the fry was only half as large as that of the fry in the control trough, which fry had been exposed to the action of the liquor.

Mortality in the succeeding experiments where the dilution was greater than 1 to 37.5 was less severe. (See table). In these later experiments, too, numbers of fry

were transferred from the exposure trough to a control trough in an attempt to ascertain the length of exposure that could be withstood in different dilutions.

Aeration of the sulphite liquor (1.050 density) diluted 1 to 4, by means of a spray pump did not produce



Here is a visualization of the effect of sulphite liquor on fish life. The four groups are: (1) 7-day Chinook fry not exposed to sulphite liquor, (2) 7-day Chinook fry killed by sulphite liquor, (3) 90-day Chinook fry not exposed to sulphite liquor and (4) 90-day Chinook fry killed by sulphite liquor.

any reduction in the immediate demand for dissolved oxygen. The liquor of the above strength was selected for this test since it approaches the dilution usually met with in sulphite mill discharge, i.e., 1 part of liquor to 3 parts of wash water. Had the liquor been diluted 1 to 32 as in the Wisconsin experiments before aeration undoubtedly a reduction in oxygen demand would have taken place. However, liquor of such strength again diluted to the proportions used in our experiments would not have shown deleterious effects on the fish.

Conclusions regarding effects, drawn from these experiments, which indicate safe exposures that may be made, follow:

Conclusions Regarding Effects:

1. Sulphite liquor, density 1.0125, when diluted 1 to 37.5 proved to be fatal to chinook fry after 4½ hours exposure. The minimum dissolved oxygen concentration during this ex-

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posure was 0 parts per million. Chinook eggs when exposed to this dilution for 24 hours, show a 30% mortality one month after transfer into the control trough, and 35% mortality when exposed for 36 hours. In the control trough, eggs not exposed to the liquor, showed a mortality of only 1.3%. The development of the eggs after 24-36 hour exposure periods is retarded. Abnormalities in development occurred among the fry which hatched. Consequently a 1 to 37.5 dilution of sulphite liquor, density 1.0125, is dangerous to chinook eggs.

2. Sulphite liquor, density 1.0125, diluted 1 to 50, proved to be fatal to chinook fry after 28 hours exposure. No effects were produced on the fry after 6 hours. The minimum dissolved oxygen during the test was 1.3 parts per million.

3. Chinook fry, 90-day stage, when transferred into the control trough after 12, 18 and 24-hour periods of exposure to the 1 to 50 dilution of 1.0125 liquor, showed a mortality of 0%, 15% and 32.5% respectively, during a two-week transfer period. The 7-day fry, when transferred under the same conditions, completely recovered, with the exception of those exposed for 24 hours, which showed a 5% mortality.

4. Sulphite liquor of 1.0125 density, diluted 1 to 75, proved fatal to chinook fry in 55 hours.

5. The liquor of 1.00625 density, when diluted 1 to 75, produced no deleterious effects upon chinook fingerlings during 122½ hours exposure. When transferred to a control trough for a two weeks period, no abnormal effects were observed. The size of the fingerlings was normal for their age.

6. Sulphite liquor, density 1.0125, diluted 1 to 80, proved fatal to chinook fry in 77 hours.

7. From these experiments it is evident that Chinook salmon in early stages should not be exposed to water containing no dissolved oxygen for any period, however brief.

8. The period of time during which Chinook fry may be exposed to sulphite liquor without deleterious effects, depends upon the dilution.

a. A safe exposure to a 1 to 37.5 dilution of sulphite liquor of 1.0125 density would be one hour, providing the original concentration of dissolved oxygen in the water before introducing the liquor is sufficient to allow a balance of 1.6 p.p.m. during the exposure.

b. A safe exposure to a 1 to 50 dilution of sulphite liquor of 1.0125 density, would be 12 hours, providing the original concentration of dissolved oxygen is sufficient to allow a balance of 2.0 p.p.m.

c. A safe exposure to a 1 to 75 dilution of sulphite liquor of 1.0125 density, would be 18 hours, providing the original concentration of dissolved oxygen is sufficient to allow a balance of 3.5 p.p.m.

d. A safe exposure for fingerlings to a 1 to 75 dilution of sulphite liquor of 1.00625 density, would be at least 122½ hours, providing that the balance of dissolved oxygen is 6.5 parts per million.

e. A safe exposure for Chinook eggs (eyed) to a 1 to 37.5 dilution of 1.0125 density of the liquor, would not be more than 6 hours, providing the original dissolved oxygen content is such as to allow a balance of at least 1.0 p.p.m.

9. Aeration of the 1 to 4 liquor (density 1.0125), by means of Lilly pump and spraying device, before introducing the liquor into the trough of flowing water, failed to lessen the instant or immediate demand for dissolved oxygen. Consequently the effects upon the fry were the same for a given dilution and strength.

10. In the lesser dilutions the sulphite liquor appears to have a chemical effect upon the scales of the chinook fry. The acidity in the lesser dilutions also has undoubtedly some effect on the fry. Fish are known to thrive poorly in acid waters.

The problem of disposing of waste sulphite liquor remains unsolved although many attempts to manufacture by-products have been made. Since the effect of sulphite liquor in fresh or in salt water is that of dissolved oxygen reduction, aeration has been proposed as a means of counteracting the oxygen demand. Where the mill adapts itself to ponding such practice is undoubtedly a valuable procedure since a partial reduction of oxygen demand takes place in the pond and to a slight extent during cascading the impounded liquor in a thin sheet into the stream. Wisconsin studies have shown mechanical aeration to be effective on an experimental scale but for large mills of 100 tons or more, the cost of installing and operating an aeration plant equipped with fine sprays would be high.

Since sulphite mills under the Washington law must avoid the pollution of strictly fresh waters owing to the fact that such waters are or may be used for drinking purposes, our problem with this waste concerns mill locations near the mouths of rivers or on salt water.

For these reasons it has been found practicable to store the diluted sulphite liquor in large wooden tanks and to discharge rapidly during the first of the ebb tide into an adequate volume of water. In some instances the liquor is diluted 1 to 8 before discharge, instead of the usual 1 to 4. This procedure is necessary in

TABLE: DILUTIONS OF SULPHITE LIQUOR AND EFFECTS UPON CHINOOK FRY AND FINGERLINGS

Original Concentration of Liquor	1.0125	1.0125	1.0125	1.0125	1.0125	1.00625
Dilution	1/37.5	1/50	1/75	1/80	1/100	1/75
Equivalent to 1.050 Liquor in dilution of	1/150	1/200	1/300	1/320	1/400	1/600
Number of Fry	500—7d	500—7d	500—7d	500—10d	500—25d	
	500—90d	500—90d	500—100d	500—110d		
Number of Fingerlings					500—4 mo.	300—5½ mo.
Per Cent Fry Killed	100	100	100	100	38.5	
Per Cent Fingerling Killed					25.5	1.33
Time required to kill fry	4½ hrs.	28 hrs.	55 hrs.	77 hrs.	146½ hrs.	
Time to kill Fingerlings					146½ hrs.	122½ hrs.
Minimum Dissolved Oxygen	0.0	1.2	3.2	4.0	4.9	6.4
Maximum Dissolved Oxygen	1.6	2.0	3.8	4.2	5.4	6.6

DEATH RATES IN CONTROL TROUGHS DURING SAME PERIODS OF TIME

Time	4½ hrs.	28 hrs.	55 hrs.	77 hrs.	146½ hrs.	122½ hrs.
Per Cent 7-Day Fry Dead	0.0	.1	.2	.2	.3	
Per Cent 90-Day Fry Dead	0.0	.1	.2	.3	.4	
Per Cent Fingerlings Dead				.3	.3	1.33

Note: These figures are based on observations on control troughs containing 1000 7-day fry, 1000 90-day fry and 500 fingerlings. They were kept alive in these troughs for periods of 6-8 weeks, after which they were turned into the ponds. The Fingerlings were fed canned salmon while in the trough. The 2½ gallon per minute water rate was used.

The 1.050 density sulphite liquor is the undiluted liquor before wash water has been applied during pulp washing in the mill.

TABLE SHOWING AVERAGE NUMBER OF DEAD EGGS IN EACH BASKET OF 2000 AFTER THE TWO CONTACT PERIODS AND IN THE CONTROL TROUGH

Baskets	Date	Feb. 2	6	10	14	23	24	28	29	Mar. 2	Total
Control		2	6	9	2	2	1	2	2	1	27
24 Hours		227	267	46	15	6	4	16	8	4	603
36 Hours		263	268	66	51	20	4	17	7	5	701

cases where the water available for immediate dilution in the water course is insufficient to protect conditions near the outlet. Since the mouths of the rivers are under tidal influence, the volume of water available for dilution during and after discharge is greatly increased by the influx of the sea water.

The Shelton, Washington, pulp mill disposal system which was described in the paper on "Stream Pollution Problems in the State of Washington and their Solution" and published by the American Fisheries Society, has proved to be satisfactory from the standpoint of preventing the reduction of dissolved oxygen in the salt waters adjacent to the outlet. During the discharge of liquor (1 to 4) from these tanks at high tide, reductions of only 1 to 2 parts per million of dissolved oxygen have occurred in the sea water between 100 to 150 feet from the outlet.

No special disposal methods for the sulphite liquor have been found to be necessary for mills located near large bodies of salt water. It is of economic interest to mill owners to locate their mills in such places.

The above article is an abstract from a paper delivered by Mr. Nightingale before a meeting of the International Game and Fish Conference held in Seattle August 27-31, 1928.

Fires In Grays Harbor Forests

Although fires continued in various parts of Grays Harbor county throughout August and early September, none of them reached standing timber and but few of them destroyed any second growth timber. The blaze at Neilton creek, Lake Quinault district, continued to smolder almost throughout August but did little damage.

A fire at Copalis crossing destroyed one logging camp and burned over several hundred acres of slashing but did not reach green timber. A blaze in the North river district destroyed some second growth timber.

Fires in the eastern end of Grays Harbor county burned over hundreds of acres of slashings and cut-over land but none reached standing timber or second growth.

Form \$3,000,000 Holding Company

Some speculation runs in the industry regarding the significance of the incorporation of the West Coast Utilities Corporation of Vancouver, Wash. Incorporation articles were filed at Olympia, Wash., on August 27. The company showed a capitalization of \$3,000,000. Articles were filed by Carey & Kerr, a Portland firm of attorneys, 1410 Yeon Building. The incorporators are William M. Winter, Earl W. Gates and Omar C. Spencer.

Efforts to learn the plans of the new company availed nothing, and the statement was made by Carey & Kerr that the company is merely a holding company, is connected with no large enterprise and will not establish an office in Vancouver, Wash. It was also emphasized that the incorporation meant "nothing out of the ordinary and was in no way identified with the pulp and paper industry."

However, the incorporation of a company of this size is not regarded too lightly by those in the pulp and paper industry of the Coast, particularly in view of the many rumors of new pulp mills that have been rampant in and about the Portland district recently. There is a persistent rumor that a 300-ton kraft mill will locate somewhere in the vicinity of Portland, and International Paper Co. is frequently associated with this rumor, but at no time is the rumor clean-cut and attached to visible facts.

Conservation Is Part of YOUR Job

"Conservation of our natural resources is one of the greatest duties we have."

The speaker was a delegate to the International Game and Fish Conference which met in Seattle August 27-31, chairman of the California Board of Fish and Game Commissioners. With several hundred other men he sat through a five-day session listening to discussions of ways and means of preserving the wild life of the nation. The speaker was Isadore Zellerbach at this meeting. At other times he is known as the president of the Crown-Zellerbach Corporation, largest pulp and paper organization on the Pacific Coast, and one of the largest in the world.

Several years ago the governor of California asked Mr. Zellerbach to serve on the Fish and Game Commission. It was a job that demanded much of a man's time, carried no salary and little thanks. Mr. Zellerbach mulled over the request and what it would mean, decided that the work was highly important, and that it was his duty to give his time and business ability to the work when called upon. He went to the governor.

"This is a tough job you have wished upon me, but I'll accept—on condition you agree to certain things. From the moment of acceptance I am responsible and your hands are off the commission. The commission will be entirely free from politics."

The fact that Mr. Zellerbach's term of service has been successful is indicated by the interested audiences he gets whenever he has a speaking date in the state. His success in the work traces to the application of sound business principles without fear or favor. Briefly, some of these policies are:

"The first job of a commission is to lay down a constructive program."

"Let the commission formulate the policy and leave the carrying out to the executive staff."

"Appoint the right men for your executive positions and hold them strictly responsible."

"No special privileges for anyone, great or small."

"Plot a definite program for the future and do something more than just spend all the money the legislature will allow."

While Mr. Zellerbach's work on the commission directly concerns fish and game his belief in conservation extends to conservation of all resources, including forests. "Conservation is a large subject and an important part of everyone's job. It is a big job. We have to eliminate petty things if we hope to accomplish anything in conservation. Conservation demands that an individual forget about himself and think only how the action will affect the welfare of the state and nation."

Mr. Zellerbach was elected president of the Western Game and Fish Association at the Seattle meeting.



I. ZELLERBACH

Mrs. Boyle of the Paradise Paper Box Manufacturing Co., of Honolulu, T. H., was a San Francisco visitor in August.

Crown Zellerbach Elects Staff

Newly Merged Company Holds First Meeting of Stockholders

THE tremendous task of launching the new Crown Zellerbach Corporation—a \$100,000,000 holding company—is being completed and to date the expectations of the organizers of the firm have been more than realized, according to the officers. The Crown Zellerbach Corporation is the organization formed by the recent merger of the Zellerbach Corporation and the Crown Willamette Paper Co.

The first meeting of the stockholders of the new company was held in San Francisco August 25, the chief purpose being the election of officers, directors and members of an executive committee.

The directors elected were divided equally between representatives of the two big merging companies.

The following officers were elected:

President—Isadore Zellerbach.

Chairman of the Board—Louis Bloch.

Chairman of the Executive Committee—M. R. Higgins.

Executive Vice President—E. M. Mills.

Executive Vice President—A. B. Martin.

Executive Vice President—J. D. Zellerbach.

Vice President—H. L. Zellerbach.

Secretary—D. J. Goldsmith.

Assistant Secretary—A. Van der Zwep.

Treasurer—S. Sonnenberg.

The executive committee was elected as follows:

M. R. Higgins, chairman; Louis Bloch, A. B. Martin, E. M. Mills, I. Zellerbach, J. D. Zellerbach.

Commenting on the personnel, The San Francisco Chronicle said:

"Scrutiny of the above lists, as released by the company, reveals the interesting fact that while the directors are evenly divided between representatives of the two former companies, former executives and directors of the Zellerbach Corporation comprise a majority of the officers of the new organization, filling the presidency, the chairmanship of the executive committee, two of the three executive vice presidential positions as well as the vice presidency, the treasurership and the office of assistant secretary, and that the executive committee is composed of four former Zellerbach executives and two former Crown Willamette men."

Below is a list of the officers and directors of the new giant company, together with their principal banking and paper industry affiliations:

ISADORE ZELLERBACH—President Zellerbach Corporation; president Zellerbach Paper Co.; president Zellerbach-Levison Co.; vice-president Washington Pulp and Paper Corp.; director Rainier Pulp and Paper Co.; vice-president Olympic Paper and Power Co.; vice-president Northwestern Power and Light Co.; vice-president National Paper Products Co.; director Independent Paper Stock Co.; director Fibreboard Products, Inc.

LOUIS BLOCH—President Crown Willamette Paper Co.; president Pacific Coast Supply Co.; chairman Pacific Mills, Ltd.; vice-president Pioneer Rubber Mills; director Schwabacher-Frey Stationery Co.; president Western Bag and Paper Co.; president Western Transportation Co.; director Bank of California, N. A.

J. D. ZELLERBACH—President Fibreboard Products, Inc.; vice-president National Paper Products Co.; director Northwestern Power and Light Co.; director Olympic Paper and Power Co.; vice-president Rainier Pulp and Paper Co.; director Washington Pulp and Paper Corp.; vice-president Zellerbach Corporation; director Zellerbach Paper Co.

HERBERT FLEISHHACKER—President Anglo and London Paris National Bank; vice-president Anglo-California Trust Co.; director Crown Willamette Paper Co.; director Northwestern Electric Co.; president Fleishhacker Paper Box Co.

H. L. ZELLERBACH—Director National Paper Products Co.; director Olympic Paper and Power Co.; director Washington Pulp and Paper Corporation; director Zellerbach Corporation; director Zellerbach Paper Co.

A. B. MARTIN—Executive vice-president Crown Willamette Paper Co.; president Pacific Mills, Ltd.

M. R. HIGGINS—President California Cotton Mills Co.; president National Paper Products Co.; president Northwestern Power and Light Co.; president Olympic Paper and Power Co.; president Washington Pulp and Paper Corp.; vice-president Zellerbach Corporation; vice-president Zellerbach Paper Co.; director Fibreboard Products, Inc.

GEORGE S. TOWNE—President Pioneer Rubber Mills; director Crown Willamette Paper Co.

E. M. MILLS—President Rainier Pulp and Paper Co.; director National Paper Products Co.; vice-president Northwestern Power and Light Co.; vice-president Olympic Paper and Power Co.; vice-president Washington Pulp and Paper Corp.; vice-president Zellerbach Corp.; vice-president Fibreboard Products, Inc.; president Grays Harbor Pulp Co.

JAMES H. SCHWABACHER—President Schwabacher & Co.; director Crown Willamette Paper Co.

M. M. BARUH—Vice-president California Cotton Mills Co.; president Englander Drayage and Warehouse Co.; director National Paper Products Co.; director Northwestern Power and Light Co.; director Washington Pulp and Paper Corp.; director Zellerbach Corporation; director Zellerbach Paper Co.

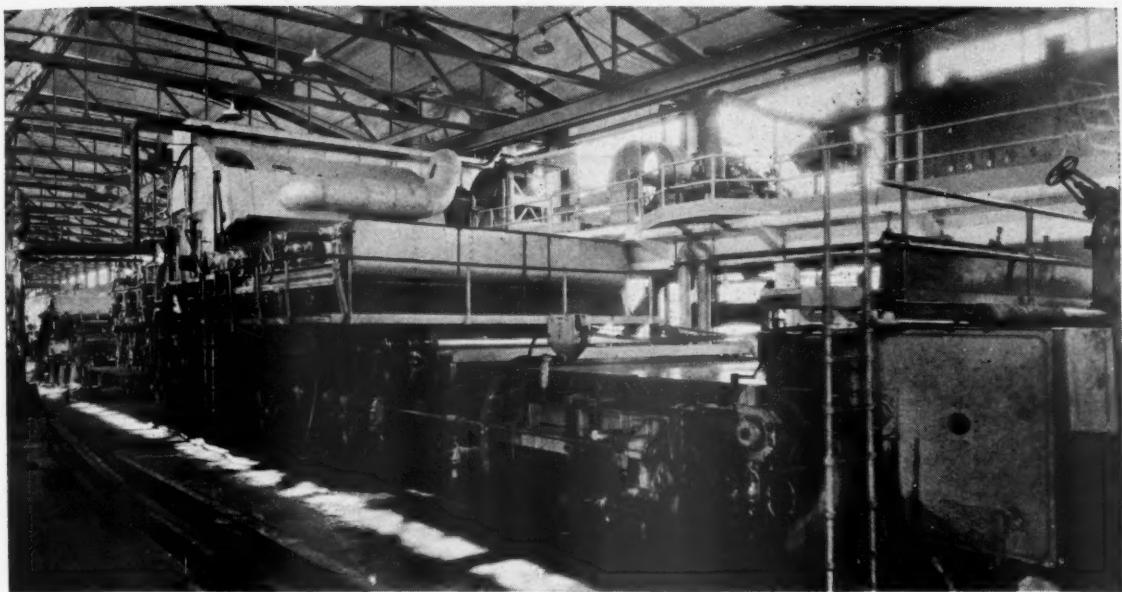
CHARLES R. BLYTH—President Blyth, Witter & Co.; director Crown Willamette Paper Co.; director Rainier Pulp and Paper Co.

J. Y. BARUH—Director Zellerbach Corporation; director Zellerbach Paper Co.

H. C. OLCOTT—President Continental and Commercial Co.; director Crown Willamette Paper Co.

Shelton Pulp Shipped via Olympia

The first shipment of pulp from the Rainier Pulp & Paper mills of Shelton to the Atlantic Coast by loading a steamer at Olympia port went forward in August on the California & Eastern line steamship West Mingo. The shipment totaled 330 tons. Heretofore all Atlantic Coast shipments have been made through the Tacoma port where the pulp has been taken by Puget Sound Freight steamers, and the recent loading brings a new ocean freight line into the Atlantic service from the local mills.



The new Yankee type machine at Longview Fibre Co., viewed from the fourdrinier end

Longview Has Largest Yankee Machine

A new line of machine glazed kraft wrapping papers was added to Pacific Coast production when the 172-inch Yankee type paper machine of the Longview Fibre Co. went into commercial production early in June of the present year. The machine is now steadily engaged in the production of about 30 tons daily of wrapping, bag and specialty papers.

There are several interesting features about the machine itself. It is the largest machine of its type in the world. It has a wire 172 inches wide. It has a drying cylinder 12 feet in diameter. The machine was manufactured by the Beloit Iron Works of Beloit, Wis., but the huge dryer was fabricated in England.

Rudolph Meili, erection engineer for the Beloit Iron Works, assembled the machine and had it ready for production in June, 1928.

When the original mill was built the machine room was constructed of sufficient size to permit the installation of the 100-ton board machine and also the Yankee machine. Footings and all other necessities were already in place.

The new machine has a wire 172 inches wide, has the latest style of removable fourdrinier and a high speed Aldrich shake. It has plain couch rolls and single press. The reel is an improved English type and the winder is a double drum type. A 250 h.p. General Electric Co. high speed steam turbine drives the machine through an improved combination drive which makes use of rope, belt and Link-Belt chain. An important feature of the machine is that all the bearings are anti-friction type with the exception of the dryer. Oil is served through a circulating system in connection with the other machine. The heating and ventilating equipment was made by the Buffalo Forge Co.

Additional auxiliary equipment installed in connection with the new machine includes three Shartle Miami No. 2 Jordans, each driven with a 250 h.p. motor, three beaters, and two Moore & White rotary screens, rotary screens.

The Longview mill has been using 100 per cent Douglas fir sawmill waste from the huge mill of the adjoining

Long-Bell lumber mill and is at present making a kraft container board of that type, but a hemlock cut-up plant was recently installed and the papers produced on the Yankee machine contain varying amounts of hemlock.

International Extends Stock Deposit Time Limit

The International Paper Co. has extended the time limit to September 30 for the deposit of their stock under the plan which contemplates the formation of International Paper & Power Co. as a holding company. The new plan will make possible a more complete segregation of the company's power and utility assets from its pulp and paper interests.

The earnings statement for the International Paper Co. and subsidiary companies issued for the first half of 1928 shows a total revenue for the period of \$8,774,813.48 as compared to \$7,071,551.63 for 1927. The 1928 net revenue available for dividends is \$3,073,009.82 as compared with \$2,407,253.44.



The drying and ventilating system on the new machine at the Longview Fibre Co., was supplied by the Buffalo Forge Co.

Eibel Sees Future for Coast Pulp and Paper

Following a two weeks' tour of the Pacific Coast which included visits to many of the mills and inspection of Coast timber and other resources, Mr. W. E. Eibel, general manager and treasurer of the Rhinelander Paper Co. of Rhinelander, Wis., departed for the East



WILLIAM EIBEL

on September 11 favorably impressed with the possibilities of the Pacific Coast for the manufacture of pulp and paper.

"There is little question that the conditions on the Pacific Coast are very favorable for pulp and paper manufacture," Mr. Eibel told PACIFIC PULP & PAPER INDUSTRY, "and without doubt this region will see the development of a substantial industry. The mills in the East are watching the Pacific Coast with a great deal of interest. Production costs here are lower."

Mr. Eibel intimated that it was quite likely that some of the Eastern mills would transfer their activities to the Coast as time went on. Raw material is becoming scarce for the Eastern mills and is brought in now from considerable distances.

A newspaper report published in Coast papers at the time of Mr. Eibel's visit stated that Seattle was being considered for a \$2,000,000 pulp and paper mill that was to be erected within the next year, and that the Rhinelander Paper Co. was interested. The report was characterized by Mr. Eibel as "premature".

"We have no definite plans in that direction," he said, "and I regret that such an interpretation should have been made. We are interested in the Coast and realize the possibilities out here, but we have no definite plans at present for any such mill."

Mr. Eibel has been associated with the Rhinelander Paper Co. for about 25 years. He knew Mr. A. E. Millington, vice-president and general manager of the Fir-Tex Insulating Board Co., when Mr. Millington was in the Middle West serving as an efficiency expert for the Rhinelander and other companies. The visit to the

Coast, therefore, gave Mr. Eibel an opportunity to renew an old acquaintance with Mr. Millington. Together with Mr. Tom G. Taylor, Mr. Sherman Miles and others, Mr. Eibel and Mr. Millington made a thorough tour of the Coast.

The Rhinelander Paper Co. is one of the largest manufacturers of glassine and greaseproof papers.

Construction Progressing at Port Mellon

Construction of the wharves and piers for the Vancouver Kraft Co., Ltd., mill at Port Mellon, B. C., is now well under way under the direction of B. M. Doolittle, general superintendent, and in a few weeks a start will be made in installing equipment, some of which, it is understood, will be from other Leadbetter mills in the Northwest. Bids for other equipment will be called for soon, it is reported.

Whether the plant will continue on a steam power basis or be converted to the use of hydro-electricity is a decision yet to be made. Surveys made during the last few months have determined that ample water-power is available for economical operation, but certain details of construction are yet to be arranged.

F. W. Leadbetter is president of the company.

Shaffer Box Company Soon to Operate

Steady progress is being made on the construction of the 50-ton sulphite pulp mill of the Shaffer Box Co. at Tacoma. During the past month steel work on the digesters has been completed and the work of lining is now in progress. Many of the other buildings were completed and much of the equipment has already been installed. At the time of this writing the Kamyr press which is to be used in connection with the Fidalgo system dryer had arrived and is being installed.

Mr. L. A. DeGuere, engineer who has charge of construction of the Shaffer mill, has returned from the East and is devoting much of his time to the Shaffer project. President Ralph Shaffer has not yet announced who the operating superintendent of the mill is to be.

Vancouver, Wash., Bag Plant Soon Complete

The Union Bag & Paper Corp. new bag factory, under construction at Vancouver, Washington, will swing into operation about December 1, according to W. D. DuBois of the Columbia River Paper Mills, who, with C. R. McMillen, president of the bag and paper corporation, launched a movement last spring for the new industry in that town. Installation of the machinery will be started about November 1, Mr. DuBois said.

Although the general contract for construction of the one-story, 200 by 300, structure called for completion of the job October 15, representatives of the contracting company intimated that the building would be ready about 15 days ahead of schedule. The roof of the new plant was finished early this month. Work on the floor was being held up temporarily, awaiting information regarding the laying of pipes.

The new factory, which adjoins the Columbia River Paper Mills, will make a complete line of paper bags and will employ about 100 workers.

Tumwater Butcher's Manila for Letterheads

Regular 50-lb. Capitol butcher fibre, manufactured by the Tumwater Paper Mills Co. of Tumwater, Wash., is being used by the Manufacturers' Association of Washington for business letterheads. The association is interested in fostering all industry within the state.

Grays Harbor Pulp Mill To Begin Operation

The Grays Harbor country in Southwestern Washington will probably receive its baptism into the wood pulp industry this month when the 175-ton mill of the Grays Harbor Pulp Co. gets into action. Construction of the buildings and installation of equipment has proceeded with rapidity in the last few months and everything pointed toward the beginning of commercial production of pulp this month. The mill will have a daily capacity of 175 tons of unbleached sulphite pulp or 150 tons of bleached product.

An initial test of the mill was made on August 28 when the boilers were tried out and other units in the mill were given preliminary trials. Chris Kuppler's Sons, contractors who erected the Grays Harbor Pulp company's buildings, finished their work in August and moved over to Port Townsend where they will construct the second unit of the National Paper Products Co. mill there.

Most of the machinery and other equipment at Grays Harbor had been installed by September 1 and was nearly ready for operation. Workmen during the last few days of August and early September were laboring overtime to complete the final work before the plant can start in its stock-making run. A cargo of more than 2,000 tons of sulphur was discharged at the mill dock late in August and other materials were arriving early in September. The first load of limestone for the company's plant came in from Blubber Bay, British Columbia, on August 29 in tow of a Puget Sound tug. The initial shipment consisted of about 500 tons. It is the first of a regular service between the British Columbia quarrying point and the pulp mill.

The chipping plant at the millsite, used to prepare pulp wood for the digesters, will be started in operation early in September. Piling work under way for an additional stock storage tank was more than half completed on September 1 by Owens Brothers, Port Angeles contractors, and its completion is to be followed immediately by construction of the big concrete structure.

The pulp company's water source plant on the East Hoquiam river was about completed on the first of September by Swan Dahlberg, contractor.

Spaulding Pulp Winning Favor

The pulp product of the Spaulding Pulp & Paper Co. at Newberg, Oregon, has been bettered materially by the recent substitution of finer screens, says Charles K. Spaulding, president of the company.

"Samples of pulp sent to the New York market undergo a most rigid inspection, and the only way to meet competition successfully is to turn out a product that approaches perfection," Mr. Spaulding stated. "Moreover, a superior product commands a better price. Since improving the quality at our mill, orders have mounted until we have all the business we can care for with our present capacity."

Mr. Spaulding intimated that an expansion program is contemplated at Newberg, but did not disclose the nature of additions to be made.

L. A. Mill Representative Here From Hawaii

E. A. Mulford, Hawaiian representative of the Los Angeles Paper Manufacturing Co., was a Portland visitor early this month. Mr. Mulford, who leaves in December for a trip to the Islands, reports a steady demand for shingles in Hawaiian territory. Business in general in that trade area is also on the upgrade.

W. J. O'Donnell Is Veteran On Coast

A pioneer San Francisco paper box firm whose history is linked closely with that of the California metropolis is the Fleishhacker Paper Box Co., 401-419 Second Street. The firm was established about fifty years ago by Aaron Fleishhacker, father of Herbert and Mortimer Fleishhacker, who today rank among the leaders in San Francisco's business and financial life.

Until the fire of 1906, Herbert and Mortimer Fleishhacker were active in the operation of the paper box house but in that year they named W. J. O'Donnell manager and devoted the bulk of their energies to other lines, such as power and banking.

Today Herbert Fleishhacker is prominent in the civic and political life of San Francisco. He is president of the Anglo and London Paris National Bank and his brother, Mortimer, long active in the Great Western Power Co., is president of the Anglo-California Trust Co. Fleishhacker Pool, San Francisco's great outdoor swimming pool on the ocean beach, said to be the largest outdoor swimming pool in the world, was named after Herbert Fleishhacker.

It is said that Herbert Fleishhacker was a very good paper box salesman in the old days and he is credited with having sold the first carton to be used for packing California raisins. Today the raisin industry is a big user of paper cartons. Mortimer Fleishhacker, while with the box company, was in charge of the office.

W. J. O'Donnell entered the employ of the firm more than 25 years ago and has been a prime mover in the activities which have made the company prosper. He is prominent in the Pacific Coast Paper Box Manufacturers Association and was chairman of the general committee in charge of the recent 1928 convention of the association at Del Monte. Gus Trost, superintendent at the Fleishhacker company, is also active in the association and conducted the golf tournament at the Del Monte convention.

The Fleishhacker company has more than one employee who has been there a quarter-century or more. Louis Adelstein, salesman, has worked for the firm for 35 years and R. E. Wallace, secretary, has been there 31 years.

Before 1906 the Fleishhacker company was also in the wrapping paper business but after the fire they sold that department to the Zellerbach Paper Co. and continued making and selling paper boxes.



Boye Portrait, San Francisco
W. J. O'DONNELL

Cousins Joins Engineering Staff of Union Bag

The Union Bag & Paper Power Corp. which is now completing its 120-ton sulphate pulp mill at Tacoma has added to its operating staff D. E. Cousins. Mr. Cousins is an old associate of Joseph E. Hedin, general superintendent of the new Tacoma plant. He was associated with Mr. Hedin in several mills in the eastern part of the country and was for a time with the Oliver Filter Co. before taking up his duties at the Union Bag plant.

PACIFIC PULP & PAPER INDUSTRY

Forest Taxation Inquiry Now Functioning

The Forest Taxation Inquiry of the U. S. Forest Service is sending out requests for information addressed to a large number of the timber owners and operators of Oregon and Washington, according to Dr. Fred R. Fairchild, in charge of this tax study. The information called for is outlined in two form statements, Statement A to be filled out for non-operative blocks of timber, and Statement B for blocks of timber which are being operated by loggers or lumber manufacturers. The object is to obtain data which will show the part that taxation plays in the economic situation of the timber industry. The questions asked have been prepared very carefully with the assistance of representative lumbermen and timberland owners of the Pacific Northwest, Dr. Fairchild states.

FRED M. FAIRCHILD

The facts called for relate to income, investment, value, carrying charges, and other items, as well as taxes paid on different kinds of property. Much of this information is of a private character, and the individual reports are to be kept strictly confidential. Forest officials promise information will be made public only in the form of compilations made in such a manner that the private affairs of the individuals who co-operate by giving the data will not be disclosed.

Cooperative Effort

This effort is a part of a comprehensive study of state and local taxation as related to forest lands which is being conducted in the Pacific Northwest by the Forest Service. This study, provided for by the Clarke-McNary Act, is part of the co-operative effort of the Federal Government, the states, and other interested agencies, in working out a solution of the major problems affecting forest conservation and reforestation on forest lands in private ownership. In accordance with the intent of the Clarke-McNary Act, the study in this region is being conducted with the co-operation of the forestry departments of Oregon and Washington and other agencies interested in forest and taxation problems, including the Forest Research Council of the Pacific Northwest, the Western Forestry and Conservation Association, the West Coast Lumbermen's Association, and the Western Pine Manufacturers' Association.

Formal endorsements of the plan of study of the Forest Taxation Inquiry recommending co-operation on the part of the timber owners have been given by a number of these organizations. Such endorsements from organizations representing the timber industry as were received in time are quoted in a leaflet accompanying the form statements which are being sent out to the timber owners. These endorsements are from the following organizations: Forest Research Council of the Pacific Northwest, C. S. Chapman, chairman; Oregon Forest Fire Association, Geo. L. McPherson, president; Oregon State Board of Forestry, F. A. Elliott, State Forester; Forestry Committee of the West Coast Lumbermen's Association, Geo. S. Long, chairman;

Western Forestry and Conservation Association, E. T. Allen, Forester in Charge.

Dr. Fairchild established offices in Portland recently in connection with the Pacific Northwest Experiment Station, 514 Lewis building, Portland, to direct the taxation study. He is being assisted in the study by Mr. R. C. Hall, Mr. P. A. Herbert and others. Dr. Fairchild is a noted economist. He is a professor at Yale University.

That our present system of forest taxation threatens the ruin of Pacific Coast forests is intimated in the following statement made to PACIFIC PULP & PAPER INDUSTRY by one of the largest lumber operators on the Pacific Coast:

"High taxation is largely to blame for the demoralization that has existed so long in the lumber industry in this state (Washington.) This year our company pays one-eighth of all the taxes in _____ county. I doubt if the property we own in that county is 1/100 part of the total real value. We have a single crop, but it is being taxed every year on a continually increasing assessment. The commissioners' own figures gathered for the purpose of resisting a railroad tax case showed that the farms were assessed at 10% of their value, the city lots and industries at 41%, and the standing timber at 65%. This year, with the very divergent rates in defiance of the Constitution and the laws the assessor proposed to increase our standing timber an average of 15%, while on other classes of property the increase as a whole was not more than two or three per cent. We have flatly refused to pay the taxes and we will fight the assessment to the highest courts. It is high time for some action."

Willapa Plans to Increase Size of Project

Actual construction of the Willapa Pulp & Paper Mills on the company's site between Raymond and South Bend, Washington, was scheduled to be started during the week of September 10, according to A. E. Burton, stock sales manager. While immediate building was contingent to some extent on the sale of \$750,000 of its first mortgage bonds, probably bearing a 6 1/2 per cent coupon, it was learned that such sale was to be considered on September 8, when R. A. Swain, president, and E. A. Barry, secretary, were to meet with eastern representatives of the syndicate in Seattle. The offer from the east was said to be definite, and it was also declared that two offers for first mortgage bonds had been received from western financial houses.

Approximately \$3,200 was paid July 1 as dividends on 7 1/2 per cent preferred stock, the sum representing dividends on the fully-paid stock outstanding on that date. While the company had not realized this sum from sale of its products, Mr. Swain said that sufficient revenue had been received from leases of its property to pay the dividends. Mr. Burton stated that the company's \$300,000 of preferred stock authorized to be sold in Oregon, has not been entirely sold, but that commitments for the \$200,000 of stock to be sold in California have been made.

Decision was reached at a directors' meeting held in the company's offices in Portland last month to change the capacity of the mill from 50 tons to 100 tons. The plant will produce 75 tons daily at the start, Mr. Burton said.

L. A. DeGuere is engineer for the company.

Ralph K. Erlandson of the mill department of the Los Angeles office of Blake, Moffitt & Towne, was a San Francisco visitor early in September.



Washington State Offices Will Aid in Rate Cases

The Department of Public Works of the State of Washington is taking an interest in the rate problems coming before the Pacific Coast mills. An invitation to the mills to make use of the machinery of the department is made in the following letter received from C. R. Lonergan, Chief of the Traffic Division of that department.

"The following is quoted from the Public Service Laws with reference to the duties of this Department:

"Section 7. Interstate Fares—Rates, Charges, etc.

"The Commission shall have power, and it is hereby made its duty, to investigate all interstate rates, fares, charges, classifications or rules or practices in relation thereto, for or in relation to the transportation of persons or property or the transmission of messages or conversations, where any act in relation thereto shall take place within this state, and when the same are, in the opinion of the Commission, excessive or discriminatory, or are levied or laid in violation of the act of congress entitled 'An act to regulate commerce,' approved February 4, 1887, and the acts amendatory thereof and supplementary thereto, or in conflict with the rulings, orders or regulations of the interstate commerce commission, the Commission shall apply, by petition, to the interstate commerce commission for relief, and may present to the interstate commerce commission all facts coming to its knowledge as to violations of the rulings, orders or regulations of that Commission, or as to violations of the said act to regulate commerce or acts amendatory thereof or supplementary thereto. (L. '11, p. 575, Sec. 58; Rem. 10394; Pierce 5585.)"

"From the above it will be seen that it is our duty, not only to hear and determine complaints as to rates, etc., within the state but also to investigate interstate rates and file complaints with the Interstate Commerce Commission, if and when found necessary or advisable.

"This Board is fully alive to the difficulties which must be met by the pulp industry now becoming an important factor in the state of Washington. We have all of the necessary machinery at our disposal and are ready and anxious to be of assistance to the pulp and paper manufacturers, as well as to all other industries in the state.

"We realize that pulp manufacturers now have and will continue to have a great many problems as regards rates on raw material, machinery and finished products. I hope you will inform those with whom you have contact that there should be no hesitancy on their part in calling upon us at any time to assist in adjusting these matters. The Department is here for that purpose and we want them to make full use of it.

Very truly yours,

DEPARTMENT OF PUBLIC WORKS.

C. R. LONERGAN,
Chief of Traffic Division.

Effect Compromise on Freight Rates on Paper

The new schedule of Westbound rail rates from mills in Wisconsin territory to points in the Western trade territory was permitted to pass without protest from the Pacific Coast mills at a hearing held in Chicago on August 26, and went into effect on September 15. Mr. J. J. Seid, traffic manager of the Crown Willamette Paper Co. made a trip to Chicago from San Francisco as spokesman for the Pacific Coast mills. It was the primary intention of the Coast mills to launch a vigorous protest because the new Westbound rate from Wisconsin territory quoted a rate of \$1 per cwt. to Pacific Coast on paper and paper articles, a reduction amounting to 20 to 25 per cent. The new rate threatened a serious competition for the Coast mills. The proposed protest was withdrawn at the last moment in view of rate equalization concessions in other directions which would place the Coast mills at their former advantage.

Forecasts Mississippi River Route for Pacific Coast Pulp Shipments

The Longview Fibre Co. last month made a trial shipment of jumbo rolls of kraft board from its mill on the Columbia river at Longview, Washington, to a point in the Ohio River district by way of the Panama Canal, New Orleans and the Mississippi Warrior service barge line up the Mississippi and Ohio rivers. The cargo was picked up directly by ocean carriers at Longview and was transferred to the barges at New Orleans. Col. Thomas B. Esty, Pacific Coast manager of the Mississippi-Warrior Service is greatly interested in the development of traffic between Coast pulp and paper mills and upper Mississippi valley points. He indicated that the Longview shipment was a trial and that this particular cargo was being watched through to destination with great interest by shipping men.

Possibilities for the development of a pulp movement from Coast mills to paper mills in Indiana, Ohio and similar territory was indicated in the trial shipment by Col. Esty. No great attention to the river route has been paid heretofore, but a new rate of 33 cents per 100 lbs. ex-shipside New Orleans to the following points has recently been made: Alton, Cairo, Federal and Chicago, Ill.; Cincinnati, Ohio; Evansville and Indianapolis, Ind.; Louisville, Ky., and St. Louis, Mo. The rates are barge-rail quotations and there is no intermediate handling charge from boat to cars. The all-rail rate to the same points is 41½ cents, but a 29c rate is now before the carriers. This is interpreted that a much better rate than 33c by the barge-rail route can be secured if sufficient tonnage is developed.

New 60c Pulp Rate Goes Into Effect

Effective September 1 pulp producers on the Pacific Coast are able to lay down their product at paper mills in Wisconsin territory on a freight rate of 60c per 100 lbs. Being a reduction from the previous rate of 65c into the same territory, the saving to the Pacific Coast producers amounts to \$1 per ton. When the railroads published their supplements making the rate effective September 1 a few Wisconsin interests filed petitions for suspension, but they did not represent a majority opinion as a greater number of Wisconsin mills wrote or wired the Interstate Commerce Commission protesting against the suspension. Protests were also filed by the Pacific Coast mills, urging that the rate be not suspended. The carriers themselves filed statements in justification of the reduction from 65c and as a result the Interstate Commerce Commission decided that no action should be taken.

The more equitable rate just secured into Transcontinental Group D, or Wisconsin territory, is in line with schedules already prevailing into Minnesota points. The next step sought is an equalization into Michigan territory. The Transcontinental Freight Bureau has for consideration at its next meeting a docket proposing a 65c rate on wood pulp from Pacific Coast points to Michigan territory.

Akers to Operate San Francisco Branch

A. W. Akers has been named operating manager of the San Francisco division of the Zellerbach Paper Co.

T-R-A-D-E - T-A-L-K

Devoted to the Paper Trade of the Western States



They're all here, from president to office boy, and families, celebrating at the annual picnic of the Standard Paper Co.

Standard Paper Company Holds Annual Picnic

Employees of the Standard Paper Co. of Tacoma with their families turned out a 100 per cent attendance at the annual company outing held at Lake Killarney near Tacoma on August 11. This year's event was marked by a great variety of stunts for men, women and children. There was, for instance, a frying pan race for the women, a mock golf tournament for everybody, and a baseball game between the men and women, the former being handicapped by having to carry about a quart milk bottle full of water. Even so, the men claim that the victory lies with them, but there are those who dispute the final score.

Van Vlack Completes Thirty Years

A very nice dinner was given on August 1 by the fine paper salesmen and department heads of Blake, Moffitt & Towne, Los Angeles, at the Rancho Country Club, Los Angeles, to Mr. George E. Van Vlack, sales manager of the fine paper department, in commemoration of his thirtieth anniversary with B. M. & T.

Mr. T. M. Denison, manager of the fine paper department, was toastmaster, and read several letters of congratulations, one being from Mr. J. K. Moffit, president at San Francisco.

Mr. Theodore Whisnand, the oldest employee of Blake Moffitt & Towne, Los Angeles, very fittingly expressed the esteem in which the guest of honor was held, and made presentation to him of a beautiful chair, a gift of the fine paper boys.

Another great surprise to Mr. Van Vlack was the unexpected visit of his brother, Mr. P. A. Van Vlack, president of the Moser Paper Company of Chicago.

Dixon Joins Ranks of Benedictics

Cupid gets a decision over another good paper man and chose August, instead of June, for the knockout as well. Lester A. Dixon, genial vice-president and general manager of the Dixon Paper Co., of Denver, is

the victim who took the count. Lester somehow or other has remained unwed all these years. Friends have wondered how he waded through the pre-war period without being caught, how he served all those months with Uncle Sam in the argument with the kaiser unscathed and how he held out ten years longer. No more wondering now. Lester has merely proved to be the same as other fellows. On August 21 he was married to Miss Genevieve Hough, prominent society belle of Denver, at St. Thomas Episcopal church in that city, in the presence of a few close personal friends. Following the ceremony the happy couple left for a three-week honeymoon to Pacific Coast cities.

Seattle B. M. & T. Have All Hands Busy

The natural adjustments following a change of management is keeping all hands busy at the Seattle division of Blake, Moffitt & Towne, recent successors to the Mutual Paper Corp. Some few changes have been made in arrangement of the office and a huge red and white sign across the length of the building proclaims the new name of the division. Vacation time, too, has served to keep all busy through the short-handed season. Both secretary E. H. Pope and James C. Whitelaw, sales manager, have now returned from their vacations and are back with shoulders to the wheel.

Bamber Off On Another Trout Fishing Escapade

Joseph Bamber, Jr., of the Denver branch of the Butler Paper Co., is off on another trout fishing expedition, this time with the avowed intention of "getting all the fish in Grand County." Bamber is one of those lucky individuals who owns a cabin near Grand Lake, Colorado's finest fishing region. As good a fisherman as he is, in spite of the fact that Mrs. Bamber is going to help fish and in spite of the two or three weeks he is going to be gone, there still should be some fish left in the county when he returns.

The Trend Is To Colors

Trends of color in printing were discussed in a talk before the Portland Ad Club of Portland, Ore., by Arthur W. Towne, advertising director of Blake, Moffit & Towne, San Francisco, wholesale paper dealers. The talk was given at a luncheon meeting of the club August 22. At the speakers table with Mr. Towne and the Ad Club officers sat Otto W. Meilke, Portland manager of the company, and Walter W. Huelat, Portland sales manager.

"The color appeal in advertising is being more and more stressed," Mr. Towne said. "Color in direct mail and other advertising is the recent trend and the best artists in the country are being employed to do the illustrating and the art work."

Mr. Towne produced seven different advertisements out of a recent issue of the Saturday Evening Post, each one stressing the color idea. The seven ads covered a variety of subjects—rugs, fire insurance, hosiery, dishes, railroads, motor cars and coffee.

"Paper today is available in most any color," he continued. "Great care should be exercised in choosing the right shade. Put as much intelligence into the background of your message as you do in your copy and composition. Paper is part of the picture and makes the first impression."

Coast Regarded As a Bonanza

Getting business on the Pacific Coast is just a matter of prying dollars out of the pavement, according to the view held by some who are not doing business on the Coast. Ask Mr. C. H. Beckwith, Pacific Coast manager of Carter, Rice & Co., who has just returned to Seattle after a vacation trip to his old stamping grounds in Boston.

"Somehow," remarked Mr. Beckwith, "a few of those who do business in other parts of the country imagine that everything is easy picking here on the Pacific Coast. Of course competition is keen in the paper trade in the New England states, but it is much the same here. Business has to be fought for here just as well as anywhere else in the country."

Mr. Beckwith took the opportunity while in the East to visit a few of the mills in the Boston district, particularly fine paper mills producing lines handled by the Carter, Rice & Co.

Larimer's Office Hides Out on Him

Rolin C. Ayres, director of advertising of the Zellerbach Paper Co., San Francisco, made his annual trip to the Northwest in August, visiting Seattle, Portland and Spokane.

Lee Larimer, who is Mr. Ayres' assistant at San Francisco, took a vacation trip to Southern California early in August and when he returned he found that the powers that be had taken his office from him. He will be located temporarily in Mr. Ayres' office.

Doane Returns From Australia

Thomas A. Doane, formerly general manager of the Pacific Coast Paper Co., San Francisco, is expected home in September from a tour through Australia and other points in the South Pacific Ocean. Although Mr. Doane has sold his interest in the Pacific Coast company, his many friends in San Francisco say that does not mean that he has retired from active work. "Tommy Doane will never retire voluntarily," they say, "he is too active and he will be in something with a bang."

Zellerbach Installs Ellis Sales Plan

As a means of increasing service to printer customers, the Zellerbach Paper Co. has purchased the rights to the Henry M. Ellis System of "Planned Sales Promotion" for printers and is offering this service gratis to customers.

Mr. Ellis formerly was secretary of the Typothetae of New Orleans and Milwaukee and devised a system of printing and sales management designed to increase production and business among printers. He carried on his work independently and recently came to the Coast and worked among the printers of Southern California, selling his service.

Mr. Ellis goes into a printing shop, surveys the shop's facilities and opportunities and then presents a report showing how the plant can be operated to its fullest capacity and how its outlet can be sold in new channels.

Recently the Zellerbach Paper Co. arranged with Mr. Ellis to enter the company's employ and to carry on the same work among the firm's customers. Mr. Ellis will work through all the Zellerbach divisions and any printer customer who wishes the benefit of the Ellis service can get it for the asking.

Three Mill Representatives Move

Moving day was enjoyed recently by three San Francisco paper trade and paper box agencies when all moved from 200 Davis Street to a manufacturers' agency headquarters at 7 Front Street, a few steps off Market.

Those who made the move were R. P. Lewis of The Buis Co., Pacific Coast representatives of D. S. Walton & Co. and McLaren, Jones & Co.; Charles Baum, Pacific Coast manager for Robert Gaylord & Co., manufacturers of paper boxes, and Charles A. Kaas, Pacific Coast representative of the American Tissue Mills, the Hampden Glazed Paper and Card Co., and the Valley Paper Co.

George A. Kaas, a brother of Charles Kaas, is now in the new office. Mr. Lewis and Mr. Baum are in one office. R. Scott Baum is associated with Charles Baum in the Gaylord office.

Handling New Strathmore Line

Carter, Rice and Carpenter of Denver are featuring in their Christmas cards this year the new Strathmore line of Meldon Laid in white and six colors. This is 22x34-64, novelty stock, to be used in the manufacture of announcements. The company is sending out to the trade sample boxes containing sixty designs of Christmas cards. A new printers' price list is also being issued, showing new lines of stocks that have been put in since the issue of the last price list. Among items showing a decline are Warren's Book Papers and Railroad Writings. Very shortly a new sample book of fancy announcements will be ready for distribution. It will feature a new line of Wallet Flap envelopes.



HENRY ELLIS

A Sales Contest That Works

**Western Pacific Paper Company Develops An Equitable Plan
That Keeps the Salesmen on Their Toes All the Time**

A VERY practical and successful sales contest scheme is now being carried out by the Western Pacific Paper Co., of Los Angeles. It is, according to E. W. Buckley, manager of the company, the only plan they have ever tried which has proven both successful and fair to the salesmen.



L. D. WEST

Mr. West first assigns a certain quota to each salesman, based on his experience, the size and type of his territory, his past sales, etc. In this case, where a cost ticket is placed on each piece of merchandise, showing cost and selling price, and the resulting gross profit, the quota is figured in so much gross profit per day. It might just as well be figured in so much in gross sales, or another unit, depending on the type of business.

Each salesman has ten units or points per day to make, each unit representing one-tenth of his daily quota. For instance, using imaginary figures, if a salesman's quota is \$50 per day gross profit, then each point represents \$5. Should his quota be \$70 gross profit per day, each unit would represent \$7, etc.

When the quotas have been set, the names of the salesmen are placed on a large blackboard, with spaces after each name in which to record the standings each day of the month. Should a salesman make 12 points, his score is marked up as 2, in white chalk, or two points over his required ten points. However, should he make but eight points, his score is marked up as 2, but in red chalk, showing he is two points under his quota of ten. At the bottom of the column, the points in relation to the total points for the day is recorded in so many points in the red or white, as the case may be. The monthly total is recorded in the same way.

At the end of six months comes the final reckoning. Those who have exceeded their quotas, or are "in the white," receive a prize of say \$50. Those in the red receive nothing.

Should the six months' total average for all salesmen be in the white, each one receives twice the amount of the offered prize, or, for example, \$100. In case the grand total is in the white, and only two of the salesmen are in the white, the others not having made

their quotas, since these two are obviously the ones responsible for the showing, they each receive three times the amount of the prize, or \$150, using the figures as before. Should there be three in the white, each one receives proportionately less or about \$140, and so on down the line, as long as the grand total average is in the white. In this way, the salesmen are encouraged to keep up their efforts even after they have made their quotas, hoping to bring the total average into the white and thus win larger amounts.

The advantage of having the board showing the points made each day is obvious and well known. In the case of the Western Pacific Paper Co., every salesman voluntarily takes a daily look at the board, and knows just how he stands. In addition, it eliminates trouble caused the bookkeeping department by the salesmen frequently asking how their sales for the month are coming along.

This plan was instituted at this firm's offices the first of the present year, and to date has proved very satisfactory. It is now considered a permanent feature of their sales program, because it is a money-maker, and that is the final test of every sales contest scheme.

Conner Now With B. M. & T. at Los Angeles

Mr. L. C. Conner, familiarly known in the trade on the Pacific Coast as "Lou", has been appointed manager of sales of the coarse paper department at the Los Angeles branch of Blake, Moffitt & Towne. Mr. Conner, who was previously manager of the Mutual Paper Corp. at Seattle, left Seattle about the middle of August for Los Angeles to take up his new duties.

Some other recent changes at the Los Angeles branch included the appointment of Mr. R. R. Whiteman, who has been associated with Mr. Doran in the coarse paper department for several years, to the post of assistant manager of the coarse paper department. Mr. W. I. Winn, who was the Northwest representative of the Cupples Co. of St. Louis for several years, and later in charge of the paper department of the General Grocery Co. of Portland, has joined the Blake, Moffitt & Towne forces as assistant manager of sales of the coarse paper department of the Los Angeles division.

Well, Now That's Over

Heads of Portland paper houses and their salesmen are back on the job following their annual vacations which are taken collectively. With the exception of J. W. P. McFall, it is believed that all the paper men took a "layoff".

Through a policy adopted eight years ago, all salesmen for the local paper jobbers take their vacation at the same time, leaving the trade to phone in "shorts" during the two-week period. Of course, if a customer insists that a representative of some house call regarding a special order, an executive goes out if necessary. As a rule, however, the trade anticipates their needs before the "peddlers" take to the great open spaces and the tall and uncut.

Everett Display Attracts Attention

J. L. Murray, director of sales promotion for the Everett Pulp & Paper Co., has prepared an educational display which attracted many interested visitors to the booth of the Lewis County Advocate at the recent Southwest Washington Fair at Chehalis.

The display is made up of a cabinet holding ten glass bottles containing samples of the materials used in their process of paper making and is augmented by a set of "talking pictures," as Mr. Murray calls them.

These are 25 photographs showing the various steps in the process of paper making as practiced at Everett, each picture being mounted on a card which contains a printed paragraph explaining in non-technical language the particular operation illustrated. The pictures occupy about 25 sq. ft. of wall display space.

In view of the great interest the public has recently evinced in paper manufacture, this display will undoubtedly prove popular for use at printers' gatherings, ad shows, fairs and industrial exhibits.

Everett Issues Set of "Trade Customs"

The Everett Pulp & Paper Co. have issued, under date of September 1st, a new and complete set of Trade Customs for the convenience of their distributors. The issue is rather unusual in that it contains under each paragraph a cross indexing or reference to other paragraphs having bearing on the particular manufacturing rule under consideration.

It also contains an innovation in the form of a general index for ready reference to any subject.

The Everett company has also recently put into use a very attractive new label for samples of their product.

Recognizing the fact that fine merchandise is rendered more attractive by a proper stage setting, they have produced a label which is out of the ordinary and takes cognizance of the prevailing vogue, which says, "Color is the Thing". The new label is a six-color effect produced with four colors—Reflex Blue, California Orange, Veriden Green and Black.

Southwestern Publishers See Powell River

A party of southern and western publishers and pulp and paper men were recent visitors at the mills of the Powell River Co., Ltd. Among those who went north on the company's yacht *Norsal* and spent a couple of days at the town were Messrs. John Kelly, business manager of the Pueblo Journal; A. R. Campbell, of the Southwest Paper Co., Houston; Volney Reed, of the Temple Telegram, Temple, Tex.; T. E. Nowels, editor of the Colorado Springs Gazette & Telegraph; A. D. Hunter, of the Southwest Paper Co., Fort Worth; Guy White, of the Dallas News; J. J. Beach, of the Southwest Paper Co., Dallas; H. H. Horton, of the Okmulgee, Okla., Times and Democrat.

Port Angeles Mill Installs New Roof

Two paper machines were shut down at the Washington Pulp and Paper plant in Port Angeles for more than a week following Labor Day, for the construction of a new roof on the building housing them. This part of the mill is the first unit, built in 1920. A third machine is operating in the new unit adjoining, completed in 1927.

During the roof construction period, repairs were made to the two machines. No men were laid off, and work was provided for more than the normal crew.

The new roof, covering an area of about 15,000 square feet, was built of thick cedar planking, with a heavy sheet of roofing on top.

Aberdeen Water Tunnel Nearly Complete

Hard rock miners of the Seims-Carlson Co. of Spokane, now constructing the city of Aberdeen's industrial water system on the Lower Wynooche river—the water of which is to be furnished pulp and paper mills which may locate in the Grays Harbor district—on August 29 crashed through the final sandstone barrier between the two ends of the 15,450-foot tunnel of the system. The margin of error in the joint was less than two inches, described as highly satisfactory. Muckers were engaged until about September 10 moving the hundreds of tons of sandstone that still lie in the headings.

With the completion of the tunnel driving, workmen have accomplished the most toilsome part of the \$1,500,000 project. The task of lining the tunnel with concrete is not expected to be completed until February or March of 1929, but this work does not require the engineering and toil that was required in the driving of the tunnel. With the tunnel completely opened, the work of lining the big bore is expected to progress more rapidly.

While the underground crews are working at the final tasks in the tunnel, other crews of the Seims-Carlson company are speeding progress on the intake basin at the Wynooche river. Forms for the big concrete intake were completed late in August and concrete workers started pouring concrete. The intake will be reinforced with steel.

The VanWinkle creek dam of the project, which will be the impounding basis for 200,000,000 gallons of water to be stored to furnish a constant supply, is virtually finished. The dam is of earth construction and is 40 feet high at the deepest portion.

The Junction City aqueduct which will carry up to 80,000,000 gallons of water daily from the reservoir to the city limits, is nearly finished and should be ready for testing in September. The installation is now about finished. The aqueduct is of wood pipe and will be about 9,000 feet in length.

The normal delivery of water through the tunnel from the impounding basin to the aqueduct will run between 60,000,000 and 80,000,000 gallons a day.

Report Contract Let for Rice Paper Mill

A report from Richvale, California, credited to Mr. Arvid Lofgren, a director in the company, states that the Pacific Coast Pulp & Paper Co. expected to let the contracts for the erection of its rice straw paper mill on September 10. It was also stated that construction was expected to begin immediately the contracts were let, and that the plant would probably be in operation by next March.

Kieffer Looks Over Northwest

E. J. Kieffer, Pacific Coast representative of the Hamersley Mfg. Co., was in Seattle in August looking over the Northwest territory. "Business seems to be in good shape up here," Mr. Kieffer said. "I note that there is an unusual amount of new construction going on." The Hamersley Co. makes grease-proof, white paper specialties, twisting tissues and other lines. Mr. Kieffer's San Francisco office is at 719 Flood building.

Nancarrow Transferred to San Jose

Ed Nancarrow, cashier of the San Francisco division of the Zellerbach Paper Co., has been transferred to San Jose, where he is to act as credit manager.

**Set-up
Folding
Corrugated
Solid Fibre**

BOARDS and BOXES

A department for interests allied
with the pulp and paper industry

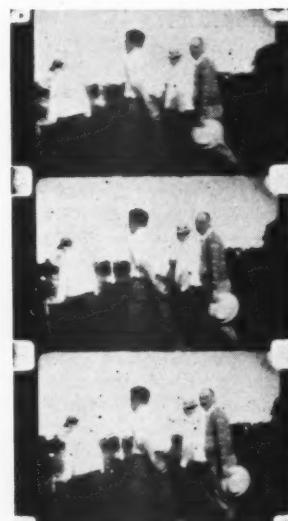
**Board
Mills and
Paper
Converters**

Movies At the Paper Box Makers Convention

"Camera!" yelled Gus Trost, but nobody heard him. So Gus went right on grinding his moving picture camera at the recent Pacific Coast Paper Box Manufacturers Association convention at Del Monte and the accompanying six pictures were part of the result.



REAL ONE



REAL TOO

This many-reeled thriller might be titled: "Teeing Up," because it was taken as the convention golfers were teeing up at the eleventh hole and while the non-golfers were also "teeing up," but in a different way, at the same hole.

It was like this: Russ Barker came down from Vancouver to the convention, with his bride and with his successful presidential aspirations, and he introduced the quaint and delightful old British custom of having tea every afternoon at four o'clock.

So let it be said that these pictures were taken at four o'clock in the afternoon and that the boys were having their afternoon tea party. In one picture you can even see the big silver pitcher in which they carried the tea. And golfers in California always tote their tea in wheelbarrows. This is another quaint and delightful old custom.

Every picture must have its cast of characters. Left to right—some were left and none was right—in the sopping (No, that wasn't a typographical error; we meant SIPPING, not sobbing) wheelbarrow scene, the persons as they appear are:

Scene I.

CORNELIUS F. SCHUCH, always called "Connie" Schuch, presi-

of the Schuch Machinery Co., Philadelphia. "Connie" is holding the pitcher and is looking at the bottom of it to see if there is a hole there because it was emptied so fast.

CHARLES J. SCHMITT — "Charlie" Schmitt — who makes boxes in San Francisco at the plant of the Charles J. Schmitt Co. "Charlie" was playing the part of the outer, outer lookout to see there was no interference.

FRED MATTSEN, Keystone Paper Box Co., Seattle. Fred donned a white coat and chauffeured the wheelbarrow hither and yon, carrying tea to the tee.

THEODORE B. MARQUIS — "Ted" — Portland man for the Nashua Gummmed & Coated Paper Co.

JOHN DOE — Like the unknown soldier, nobody knows who he is. His face cannot be seen and he lost a golden opportunity for eternal fame.

R. C. McCRYSTAL — "Mac" — Fibreboard Products Inc., Southgate, Los Angeles. You can have three guesses as to what "Mac" is doing. Yes, that thing in his hand looks like a shaker.

RAY THIEBAUT — Thiebaut Bros., San Francisco. Ray can be seen doing his elbow exercises, up, up and up, then down.

That's the end of that scene. The next picture shows the wheelbarrow "drinkateria" moving on with its train. See the men following the wheelbarrow. Why are they following the wheelbarrow?

Scene II.

The cast in this scene, ditto on the left to right, are:

FRED MATTSEN — Fred sure was the life of this party.

WILL KEWELL — Western Paper Box Co., Oakland. If Will had only held his hand still, there wouldn't be so much doubt as to what he has in his hand. Carl Schmidt put this picture under his microscope and says there is no doubt at all. Perhaps Will is trying to hide his supply.

THEODORE B. MARQUIS — Here's "Ted" again. Just can't keep him out of the movies.

PHIL E. HULING — Charles J. Schmidt Co., San Francisco. Phil is just about to rush up and save the heroine from a watery grave.

And now, boys and girls, that's all for tonight. The lights are turned out, the people in the picture passed out and tomorrow night at Town Hall you can see it all.

Dielschneider's Staff Holds Picnic

About 35 employes of the Oregon Paper Box Factory, Portland, and their friends held their first annual picnic August 18 at Park Grove near the city. Games, including baseball and horseshoe, with a bonfire in the evening were features of the occasion. The affair was enlivened by songs, accompanied by various portable musical instruments. A basket luncheon was served shortly after noon, with sufficient left over for a dinner in the evening. Ice cream and cake were served by the management. The party was conveyed from the plant to the grounds, adding to the gayety of the gathering.

The outing was enjoyed to the extent that plans are already being matured for a similar event next year, according to Mrs. Felix Dielschneider, chairman of the entertainment committee.

Portland Envelope Co. Uses Oregon Products

That Portland appreciates industries utilizing Oregon-made products is indicated by the substantial growth made by the Portland Envelope Co., which completed its first year's operation last month.

"Hearty cooperation among the business houses and jobbing interests of the city has enabled us in the short time we have been in business to reach our capacity of 200,000 envelopes per day," said Mr. A. A. McFarland, manager. "Our prospects are sufficiently bright to warrant an expansion program, plans for which are under way. In fact, we expect to increase our daily capacity almost 100 per cent, and within six months it is highly probable that we will be turning out 350,000 envelopes a day. This will necessitate additional equipment which is to be added shortly."

"Without question our stride has been increased through the use of Oregon paper which we are at present securing from the Hawley Pulp & Paper Co., and the St. Helens Pulp and Paper Co. While it may seem incredible, virtually 100 per cent of our supplies come from Oregon industries. During the past year we have cultivated the local trade intensively; however, inquiries are coming in from the Philippines and Hawaiian Islands. Accordingly, we are planning on extending our trade territory."

The Portland Envelope Co., a subsidiary of the Rocky Mountain Envelope Co., Denver, Colorado, is an Oregon corporation and represents an investment of about \$30,000.

They Would Doubt Izaak Walton

"ABSOLUTELY COLLECT. STOP. SARDINES RECEIVED. STOP. WHERE IS THE CAN. STOP. CONGRATULATE THE INDIAN WHO CAUGHT THEM. STOP. AS A FISHERMAN YOU ARE A GOOD PURCHASING AGENT."

The above telegram was sent by President R. J. Gruenberg and others of the Boxboard Products Co., San Francisco, in August to C. J. Bastedo, secretary and purchasing agent of the company after Bastedo had sent two fish down from Oregon, where he had gone on a vacation trip.

The San Francisco office also purchased a box of worm lozenges and a glass of fish food and sent it along to Bastedo in Oregon.

Bastedo took his vacation after Gruenberg had returned from a two months' trip through the east and a rest at Coronado, near San Diego.

Feature Hand Painted Boxes for Fall Trade

The Deline Manufacturing Co. of Denver, makers of fancy boxes, has a choice line of hand painted candy boxes to interest the trade this fall. Irving A. Deline, president of the company and the designer of the hundreds of styles, particularly odd shapes, has worked up new ideas in painted covers and has added six artists to his payroll to carry out these ideas. The confectionery trade has been circularized concerning these new styles and Deline has been swamped with orders for them. The factory is working overtime now on advance Christmas orders.

Set-Up Line of Boxes Going Well

The Inland Paper Box Co., of Denver, Colorado, reports that conditions in this territory have shown a slight improvement in the set-up line of paper boxes during August. With the fall season now on the firm is keeping fairly busy in supplying the local demand.

Guild Purchases Portland Tag Plant

George G. Guild, president of the Columbia Paper Box Co., Portland, purchased the Tag Products Co. plant in that city last month for a consideration of approximately \$25,000. The business, which will hereafter be known as the Columbia Tag Co., will be conducted as a separate organization.

Immediately following his purchase Mr. Guild be-



GEORGE G. GUILD

gan construction of a one-story, 50 by 65, concrete building at the rear of his box plant to house the tag factory. Removal of the tag factory from its present location at 86 North Fourth Street to the new site at 212 East Twenty-fifth Street N., was expected to be made late this month. Incidentally, the new structure is designed to carry an additional story should business expansion warrant.

The tag department is at present in charge of Mr. Guild's son, Donald H. Guild, who has been made vice-president of the reorganized company. The younger Mr. Guild succeeds S. E. Hodge, manager for the past two years. Mr. Hodge has not stated his future plans.

Tag Products Co. was established about ten years ago as the Pacific Tag Co., by H. G. Freeman, who later sold his interest to a stock company, which company continued in operation until the business was acquired by Mr. Guild. Trade territory for the concern embraces the Pacific Northwest, Honolulu and Hawaiian Islands.

The added unit, which represents an investment of \$5,000, will bring the combined floor space up to 22,000 square feet, the two units having a total length of 200 feet. Plans are underway for the installation of additional tag equipment, costing in excess of \$3,500.

Mr. Guild, who has headed the Columbia Paper Box Co., for the past 13 years, was formerly with the Robert Gair Co., New York box makers, as traveling representative, his territory embracing southwestern, inter-mountain and Pacific coast states.

German Box Manufacturer Views Coast Plants

An educational tour through Pacific Coast paper plants, pulp mills and paper box factories was made in August by Heinz Keilpflug, Jr., son of the owner of the Rob. Keilpflug Co., large paper box and paper bag manufacturers of Berlin, Germany. Young Mr. Keilpflug has been in the United States since October, 1927, seeking data to prepare him to take over the management of the big Berlin plant on his father's retirement.

No great outstanding differences in manufacturing processes were reported by Mr. Keilpflug as between American and German paper box and bag manufacturers. Much of the same high speed manufacturing and printing machinery is used in both countries. In the eastern states he reported he found many machines which originated in Germany.

In America, however, Mr. Keilpflug reported he found a wider use of paper boxes and paper shipping cases. In Germany, he said, the fibre shipping case has not replaced the wooden box to the extent it has on this side of the Atlantic.

Mr. Keilpflug intends to return to the fatherland in December of 1928. He worked for three months as an ordinary employe in the paper box plant of Betner & Co., in Devon, Pa., later took a course in advertising and salesmanship at Columbia University and then toured the United States, making a side journey to the Hawaiian Islands. He returned to San Francisco from the islands August 22 and then turned his attention to the Pacific Northwest, where he looked over some of the larger pulp and paper plants.

Wood Blocks for Small Cut-Out Orders

By using bass-wood, a Portland printer has hit on the idea of making large chipboard window display cutouts at a price which, he believes, will result in a growing demand for such cutouts among those unable to buy large quantities to get a low price.

"The wood blocks can be engraved at a minimum expense," he says. "This method will result in a material saving, as considerable expense is attached to making zinc and marble plates. Orders for a few hundred cutouts can be filled as cheaply as orders for several thousands by using this material. It will be possible to give quicker service, as this work has been done heretofore in San Francisco and Chicago."

"It is possible by using basswood to make cutouts as large as 36 by 40. The manufacturer starting in a small way usually hasn't the money to exploit his product properly; consequently, he is unable to advertise his product in windows and on showcases the way he would like. This means that he often has to give up his project. I have interested several local manufacturers in my new process, which means that I will be using more No. 20 chipboard."

Bass-wood is preferred, he says, because of its small grain. Furthermore, it is light, soft, tough and durable, he points out.



HEINZ KEILPFLUG
Boye Portrait, San Francisco

Western Paper Box Adds Equipment

The Western Paper Box Co., manufacturers of folding and set-up boxes, have completely modernized their plant by the installation of new labor-saving machinery, according to William H. Kewell, assistant general manager. Fred W. Kewell, pioneer manufacturer, is president and general manager, and J. A. Benedict is sales manager.

"As a result of the lowering of costs of our boxes, all lines of industry are now in a position to use these splendid merchandising aids," observes Kewell. He points out the advantages of attractive boxes, from a retailers standpoint. "Not only are foodstuffs and other products protected by paper boxes, but their salability is enhanced. A small box containing one or more units can be easily and attractively displayed on both shelf and counter without deteriorating," he said.

Fred W. Kewell and William H. Kewell have recently returned from a trip to New York and other Eastern points inspecting various paper box plants and latest machinery. New methods and innovations in production were noted by the Kewells and will be installed.

Fibreboard Adding Unit at Antioch

Construction of a new converting plant for the manufacture of various types of boxes has been started by Fibreboard Products, Inc., at Antioch as part of the expansion and improvement plan upon which the company will spend more than one million dollars during the next year. The plant at Antioch will be completed in about six months and afford employment for approximately one hundred and fifty men in addition to those already on the pay roll.

Western Wax at Portland Completes New Unit

Construction on a second unit for the Western Waxed Paper Co., Portland, was finished early this month, and machinery was being installed as this was written. It was expected that the "wheels would be turning" by October 1, E. C. Bogren, manager, said.

The new one-story structure is of reinforced concrete and covers an area of 112 by 240 feet.

New Rates Aid Arizona Box Business

Harry L. Lourie of the Standard Paper Box Co., Los Angeles, was a San Francisco visitor in August. Mr. Lourie reported that recent reductions in railroad freight rates between Los Angeles and points in Arizona and New Mexico had stimulated business in paper boxes in those two states. The Standard company has a salesmen in that territory and reports business good.

Fifty Weeks More and Vacation Is Here

Glad to get back, Charles J. Schmitt of the Charles J. Schmitt Co., folding box manufacturers of San Francisco, returned to his home recently from an eastern vacation trip. R. O. Comstock of the Schmitt office spent part of August on a vacation into the California mountain country.

Grigsby Returns to Full Work Schedule

Grigsby Brothers, Portland box makers, resumed their six-day a week schedule late this month. Walter Grigsby, head of the plant, stated that the factory had been running five days a week since the first of the year, but that with the increase of fall business it was necessary to go back to the old schedule.

Fibreboard to Spend \$1,000,000 In Improvements

Fibreboard Products Inc. will spend \$1,000,000 in the next few months in a general improvement program of all of its Western plants. The announcement was made by President J. D. Zellerbach in August, following a meeting in which the directors had approved the program. No new machines are to be added, but a general program of overhauling will be undertaken with a view toward bringing all of the company's plants up to as high an efficiency as possible. The work will be carried over into 1929.

The improvement program just announced has more or less been looked for in the trade since the merger of the two big companies—Paraffine Companies Inc. and National Paper Products Co.—a year ago to form the present organization. The present company has a daily production of board of about 560 tons of all grades, and in addition is a large manufacturer of solid fibre, corrugated and other paper containers. The estimated book value of Fibreboard Products Inc. is about \$15,000,000.

The company manufactures mechanical and chemical pulp, all grades of boxboard, straw and rag papers, and fabricates corrugated and solid fibre containers, folding and set-up boxes, cartons, oyster pails, paper tubes and cans, fibre wall board, and other paper products.

It has paper and board mills at Stockton, Antioch, Vernon and Los Angeles, California, and at Port Angeles and Sumner, Washington; also converting plants at Stockton, South Gate, San Francisco and Vernon, California, at the Washington mills, and in the Hawaiian Islands. In addition the company operates a chain of paper stock collecting houses.

West Coast Uses Much Gummed Tape

Thomas Ellis, representative of the Mid-States Gummed Paper Co. of Chicago, was in the Pacific Northwest in August calling on the trade. Mr. Ellis has a large territory, embracing all of the Coast and Mountain states. He makes his winter home in Los Angeles, but spends about six months of each year on the road continuously. Mr. Ellis does much of his business with paper container manufacturers, but also sells a large amount of poster paper. His company has recently placed a contract for all posters to be used in connection with the world fair in Chicago in 1930. This order calls for poster paper to be printed on the gummed side.

Stern Believes In Association Work

Edgar L. Stern, San Francisco, York-Stern Paper Box Co., is a true believer in the value of a strong trade association in any industry. Mr. Stern commented recently that the 1928 convention of the Pacific Coast Paper Box Manufacturers' Association at Del Monte was one of the best the association has ever held. The members from different points are getting better acquainted with each other, Mr. Stern said, and each is finding out that his competitor is not a bad fellow after all.

Clark Handles Sales for Columbia

R. J. Clark, for the past year with the Columbia Paper Box Co., Portland, has been named sales manager of the company. Mr. Clark, who was formerly connected with a local bank, succeeds Payson Thompson, who recently resigned to take a similar position with the Portland Paper Box Co.



N. M. BRISBOIS



MISS WINIFRED DUIGNAN

Brisbois-Duignan Engagement Announced

A romance of the fibreboard industry was chronicled recently by the announcement of the engagement of Miss Winifred A. Duignan of San Francisco and N. M. Brisbois, Stockton, general operating manager of Fibreboard Products, Inc.

Miss Duignan for some time has been private secretary to J. D. Zellerbach, president of Fibreboard Products, Inc., and executive of several of the Zellerbach companies. She formerly was with the National Paper Products Co., and at one time was purchasing agent of that concern. It was said Miss Duignan was one of the few women in industry to become purchasing agent for a company the size of the National Paper Products firm.

Mr. Brisbois has been in the boxboard business for many years, having been an executive in large plants in Indiana before coming to the Pacific Coast. Before assuming his present post, he was manager of the Stockton plant of Fibreboard.

Miss Duignan's brother, Peter, has taken her place in the company.

Production of Boxboard for July, 1928

July production of boxboard, based on reports to the Department of Commerce by 93 firms operating 120 plants (reports for earlier months including four concerns now out of business) was 73.2% of capacity, as compared with 79.9% in June and 69.2% in July, 1927.

Capacity of the mills included in the July statistics was 275,100 short tons and the actual output was 201,489 tons. New orders made a total of 210,547 tons and the unfilled orders at the end of the month stood at 79,492 tons. July of 1927 revealed greater stocks on hand at the end of the month, the corresponding figures for last year being: new orders, 213,649 tons and unfilled orders at the end of the month, 109,616 tons.

Production for the first seven months of 1928 reached a total of 1,536,696 tons as against 1,393,641 tons for the same period in 1927. Average production for the first seven months of 1927 was 71.2% of capacity as against 78.2% for the same period in 1928.

Gilman Rests Up—Way Up

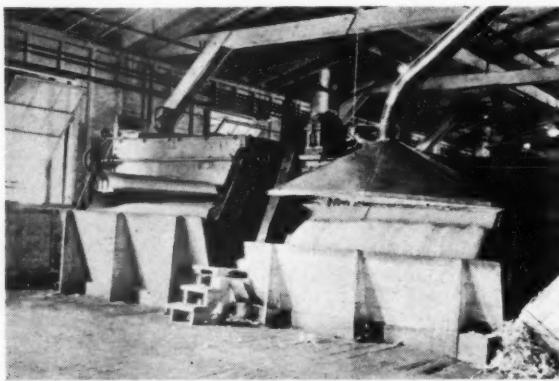
Jake Gilman of the Gilman-Petterson Carton Co., San Francisco, spent his vacation golfing at Lake Tahoe, in the high Sierra Nevada mountains. Jake was getting in trim to grab more prizes at the convention of the Pacific Coast Paper Box Manufacturers' Association at Del Monte next year.

Bellingham Mill Doubles Capacity

San Juan Pulp Manufacturing Co. Completes Expansion Program

FINISHING touches on a program of expansion and improvement were made at the mill of the San Juan Pulp Manufacturing Co. at Bellingham last month. The mill first began production of unbleached sulphite pulp in October, 1926, with two digesters. It is a companion mill to, and under the same management as, the Fidalgo Pulp Manufacturing Co. at Anacortes.

The program just completed first took definite form last spring when the stockholders voted to expend approximately \$200,000 in enlarging the mill. That was in February. The city ordered a street vacated to per-



Showing one new and one old Fidalgo dryer of the four installed in the San Juan mill. Dried, shredded pulp is discharging into conveyors.

mit the mill to expand and the work proceeded without delay.

Briefly the San Juan mill has added since the spring of the present year, two new digesters of 12-ton capacity, an additional 800 h.p. boiler, a new fuel bunker, enlarged and improved room, two new Fidalgo system improved dryers, additional screen capacity, and a new baling and wrapping system.

These major improvements, of course, necessitated extensions to existing buildings, such as enlarged boiler house, digester house, chip storage, wood handling system, storage and revision of the acid plant.

The Fidalgo mill is a pioneer mill in the use of waste box lumber for the manufacture of pulp and the San Juan mill was closely patterned after it, using the same type of mill ends. Large saw mills immediately adjoining the mill and in the Puget Sound basin provided additional box waste and hog fuel. With the completion of the present year's program, however, some changes have been made in the raw material supply and the mill has turned from the exclusive use of box lumber to a partial use of waste slabs. These slabs are barked at the lumber mills and arrive at the San Juan plant in the form of 4-foot barked wood.

The wood is unloaded directly to chain conveyors, passed through showers, and inspected by a wood room crew that throws out bad stock and diverts it to the boiler house. Knotty sticks are cleaned up with a small circular saw.

The chipping room is fitted with usual line of disc chippers, but a new installation here includes a power feed chipper designed by the Hesse-Ersted Co. of

Portland. This chipper has been designed especially for use on waste wood with a special view in mind of chipping the wood down to its final piece, eliminating the trouble that chippers have sometimes given in pulling the smaller pieces of wood or ends through without chipping. This room also has mechanical chip screens and a more recent installation of the Traylor Vibrator electric screen which gives a positive vibration of 3600 per minute. This screen was installed several months before the completion of the recent San Juan program.

The digester house immediately adjoins the screen room and beyond, as a part of the same building, is the dryer room. All building construction is of the mill type.

In the dryer room it has been a case of making the most out of the space available and the feat has been so engineered that four Fidalgo system dryers are now installed where only two were installed before. The two new dryers, more compact than the two original dryers, have been installed parallel to the old units without enlarging the room. The present installation gives four dryers delivering shredded pulp at one end of a large room.

Two New Dryers

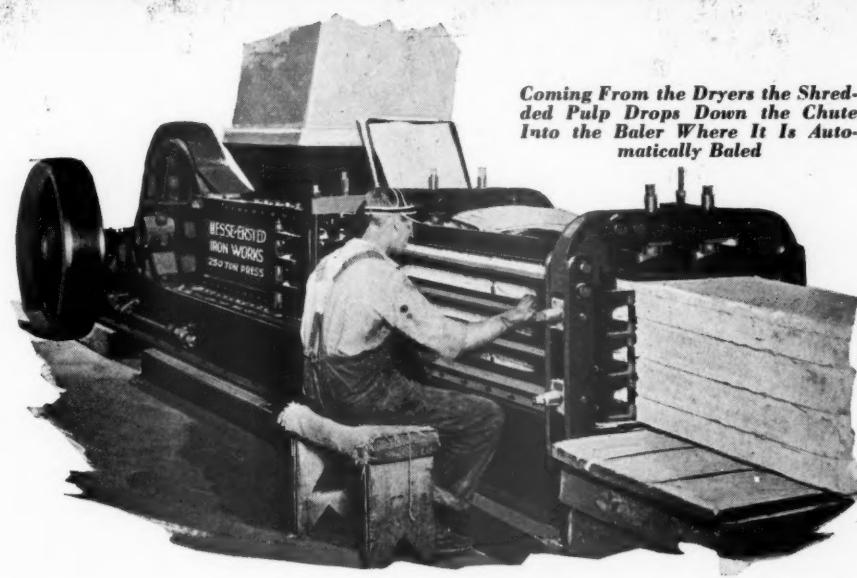
The two new Fidalgo dryers represent improvements developed in pulp drying in the past six months. Some alterations have been made to make the machines particularly suited to shredded pulp. They have a larger capacity per unit over the old style dryers. The new units require only 70 per cent of the floor space used by the old installations, and machines of this type are now available in capacities varying from 25 to 75 tons for each wet machine.

The new type dryers have eliminated several minor objections present in the old style machines. The new machines do not necessitate weekly cleaning of coils. A new style wire apron used to carry the pulp through the dryer has reduced upkeep cost in that direction. The new machine also has four variable speeds, controlled with a Llewellyn drive. In the new installations the pulp chambers are positively sealed from the heating coil elements and the pulp kickers are also of special design to eliminate dust accumulation.

Two specially designed wet machines made by the Sumner Iron Works are used in connection with the new dryers. These employ a two-speed direct motor driven device that will permit pulp to be dried in sheets without shredding when it is desired to dry wrappers. These sheet wrappers are dried directly through the dryers without loss of time.

A new type pulp baler and new system of wrapping and tying the bales completes the San Juan installation. More complete description of this part of the installation is given elsewhere in this issue.

Officers of the San Juan Pulp Manufacturing Co. are Ossian Anderson, president; William Morrison, vice-president; O. M. Green, secretary-treasurer. Directors are P. F. Knight, president of the Mutual Lumber Co. of Bucoda, Wash.; Peter G. Schmidt of the Pacific Coast Investment Co., Olympia; U. M. Dickey, president of the Consolidated Dairy Products Co., and R. H. Miller, former president of the Mutual Paper Corp. of Seattle.



Coming From the Dryers the Shredded Pulp Drops Down the Chute Into the Baler Where It Is Automatically Baled

Modernize Your Pulp Making With the FIDALGO SYSTEM of SHREDDING and DRYING

After four years of operation and development we are now ready to offer the manufacturers of pulp an entirely new and superior method of drying and shipping pulp for domestic rail and water shipment or for export.

The FIDALGO SYSTEM, the name of this new method, has been carefully developed in our own plants which are now producing 150 tons per day. Pulp produced by this system has met with distinct favor among paper mills using it.

To the buyer of pulp the FIDALGO SYSTEM offers—

1. FIDALGO produced pulp being in small pieces and with a rough fibrous surface hydrates more quickly than sheet pulp, thus saving a large amount of time in the beaters.
2. FIDALGO produced pulp does not lose strength in drying as does pulp made on cylinder machines. It retains approximately the same strength as the wet sheet.

To the manufacturer of pulp the FIDALGO SYSTEM offers—

1. A saving of 1/3 in original cost of equipment and installation.
2. A daily saving in operating costs through a large decrease in steam consumption.
3. A simple and efficient system of baling the finished pulp for shipment. The bale weighs 250 pounds and contains about 6 cubic feet.

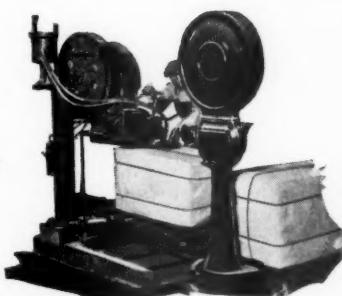
These advantages and others have through practical demonstration induced five large new pulp mills to adopt the FIDALGO SYSTEM of making pulp.

The process worked out in every detail is available to you together with our experience and advice in purchasing complete equipment for converting the slush pulp into dry pulp for market. This includes a license to operate under our complete process patents.

For Detailed Information Write

The FIDALGO PULP MANUFACTURING CO. Inc.
ANACORTES, WASHINGTON

**TYING
and
WEIGHING**



*The Finished
Bale Ready
for Rail
or Water
Shipment
50 Cubic Feet
Per Ton
250 Pounds
Per Bale*



The man in the foreground is threading a tie wire through the Hesse-Ersted baler. A completed bale has just been discharged and awaits wrapping and strapping. Note the heavy construction of the baler.

Refinements in Baling Pulp

System Developed at San Juan Mill Produces Compact Shipping Package

ONE of the criticisms of shredded pulp has been that it is light and fluffy and therefore, because of its nature, would not package into a satisfactory bale. Following the adoption of the Fidalgo system of shredding and drying pulp a suitable type of baler was sought, but there being none available an ordinary hay baler was impressed into service. Such is the type of baler that has been seeing service in many of the mills.

This baler, however, was not designed with any great strength and one of its principal faults was that it could not produce a compact bale of a high density. Where water shipments are involved the size of the bale is of first importance because ship freight charges are computed on both bulk and weight. Since most of the Pacific Coast mills are situated either directly on salt water or close to it, water transportation is an important factor in getting the commodity to the market.

With the steady increase in pulp tonnage on the Pacific Coast the steamship companies have been going deeper and deeper into the subject of pulp, recognizing in this commodity a desirable tonnage. In the present year the steamship lines have made a definite bid for the pulp tonnage by placing in effect a special commodity rate from Pacific Coast to Atlantic seaboard of \$6 per ton. This is a minimum quotation, based on pulp in bales that will stow 51 cu. ft. or better to the ton. Bales measuring greater than 51 cu. ft. are charged a freight tariff which is revised rather sharply upward. It has been most important, therefore, under existing conditions, that bales for shipment be compact.

There are, of course, other factors in favor of a highly compressed bale. A tight bale will handle better with less chance of breaking open and spilling the

contents and attendant exposure to dirt. Another factor is that high minimum loadings are required in rail shipments and the compact bale makes possible greater individual car loadings.

The problem before the mills has been to secure a compact bale with reasonable cost. It was necessary to have a baler that would compress to the desired density with low cost and with speed that would take care of the output.

The Hesse-Ersted Co. of Portland has long been working on the baling problem and has recently installed at the mill of the San Juan Pulp Mfg. Co. at Bellingham a baler which is the fruit of much experiment. In connection with the baler, the San Juan mill, and the Acme Steel Co., have worked out a system of wrapping and strapping the pulp bales that is reported to work out in a highly successful manner. The entire operation of baling, wrapping and strapping is now a co-ordinated operation.

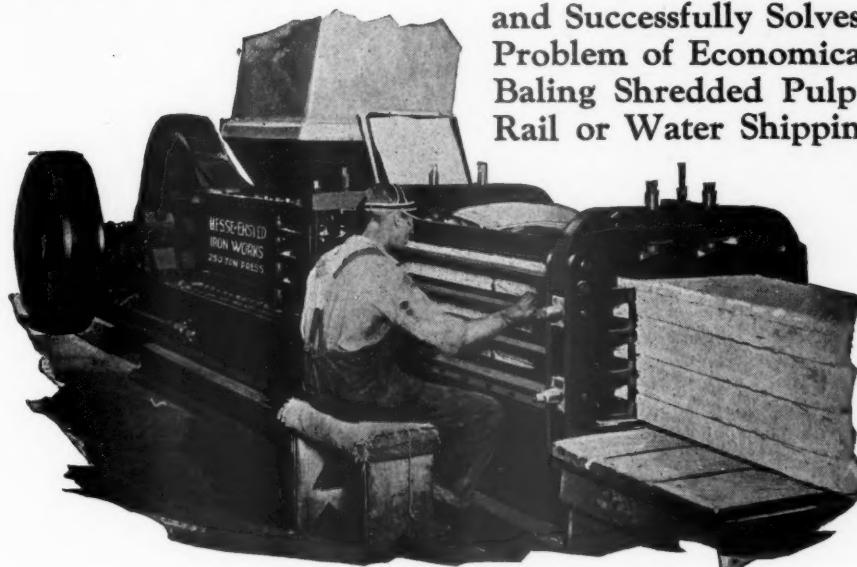
Experiments were made along the lines of mechanical compression, and it is on that principle that the final Hesse-Ersted baler has been developed. The machine is of unusually stout steel construction due to the stresses to which it is subjected. It weighs 26,000 lbs. Dried, shredded pulp is fed into a hopper at the top of the baler. A slowly moving piston with a rectangular head fitting the bale compartment compresses each small batch of pulp dropping into the chamber. The baler is motor driven through a heavy set of gears. A catch holds the end of the forming bale after each stroke so that the compression already secured is not lost.

The forming chamber is long enough to hold about two bales at once. The sides of this chamber are of

(Turn to page 52)

This BALER Compresses Fidalgo Shredded Pulp To 50 Cubic Feet Per Ton or Less

and Successfully Solves the
Problem of Economically
Baling Shredded Pulp for
Rail or Water Shipping



*Above Hesse-Ersted Pulp Baler baling 50 tons of pulp per day in
the mill of the San Juan Pulp Mfg. Co., Bellingham, Wash.*

ONLY with the HESSE-ERSTED PULP BALER can you compress shredded pulp into 50 cubic feet per ton or less enabling the manufacturer to take advantage of the large saving in freight offered by rail and water carriers on pulp bales having a density of 50 or less cubic feet per ton. We have spent many months and much money perfecting this baler.

It is of our own original design; is the only press that will bale shredded pulp continuously as it comes from the dryers. Pulp manufacturers adopting the FIDALGO SYSTEM of Drying and Shredding Pulp can insure the success of their installation only by using the one baler that has proved itself capable of turning out a properly compressed bale.

*If this means anything to you drop us a line
and we will furnish you with particulars*

HESSE-ERSTED IRON WORKS

Portland, Oregon

Builders of Pulp Mill Machinery

PACIFIC PULP & PAPER INDUSTRY

Refinements in Baling Pulp

(Continued from page 50)

unusually heavy construction to prevent bulging of the bale. Wooden blocks are inserted at the ends of the forming bales and through these blocks wire ties are threaded and tied before the bale is expelled from the chamber. The ties are not drawn up to the full limit of slack and the effect is that the slight expansion of the bale as it leaves the baler sets the binding wires



The bale at the left has just come from the baler and is ready to be wrapped in the sulphite sheet seen in front of it. The wrapped bale then passes under the strapping and electric spot welding machine in the center and then to the scales at the right for weighing.

securely. The bales coming out are straight-sided and bundle into a neat package.

The bale passes from the baler to a roller platform on which has been placed a double sulphite wrapper. The bale is wrapped and then run under an automatic strapping and electric spot welding machine. This feature is the latest development in the whole operation of pulp baling and tying. Four bands of galvanized 14-gauge flat steel are passed about the bale over the sulphite wrapper on the long dimension, two on each side. In operation the flat steel is drawn up in a special device and clipped for length, the electric welder is then brought in contact for a moment and two spots are instantaneously welded on the overlapping ends of steel. After the first two straps are welded the bale is given an easy flip to its other side and the two other straps are secured and welded.

President Ossian Anderson of the San Juan mill states that the installation of this strapper and welder has speeded up operations so that two men can wrap and strap four tons per hour. The electric welding eliminates the waste in strapping which is experienced when using a seal for the bands and also eliminates the cost of the seals, President Anderson states.

A platform scale with dial is installed immediately adjacent to the welder and the bales are rolled off the welding platform directly to the scales for weighing. The weight is chalked on the bale wrapper and the bale is trucked directly to the warehouse or to shipping platform.

Shredded pulp bales at the San Juan mill are running less than the necessary minimum of 51 cu. ft. per ton, according to President Anderson. The Hesse-Ersted Co. state that the baler has a capacity of 50 tons per 24

hours when compressing pulp to a density of 45 cu. ft. per ton, which is regarded as the machine's compressing ability. The San Juan bales weigh about 280 pounds each.

A similar baling and wrapping installation is to be made at the mill of the Fidalgo Pulp Mfg. Co. at Anacortes, companion mill to the San Juan mill. The same type balers will also be installed at the new 100-ton kraft pulp mill of the Union Bag & Paper Power Corp., and in the new 50-ton sulphite pulp mill of the Shaffer Box Co. in Tacoma. Both mills will soon be in operation.

Port Townsend Begins Production in October

Construction and installation work on the first unit of the kraft mill of the National Paper Products Co. at Port Townsend, Wash., was drawing to a close as this was written and everything pointed toward an initial turning over of machinery at the end of the month with commercial production beginning in October, according to President J. D. Zellerbach.

The first unit will have a daily capacity of about 100 tons of kraft pulp and test liners. A second unit, now under construction will double the pulp capacity and carry as a principal piece of equipment a 248-inch kraft paper machine, widest in the world for that type of paper. The second unit will be in operation early in 1929.

The pivot men who will put the new mill into operation have been announced as follows:

Resident Manager	A. B. Lowenstein
General Superintendent	Robt. Woodhead
Assistant Supt. and Chemist	E. W. Erickson
Paper Mill Superintendent	L. S. McCurdy
Chief Engineer	D. J. Wollam
Master Mechanic	A. J. Bogan
Electrical Foreman	E. F. Drake
Pipe Foreman	Clarence Williamson
Yard Foreman	A. L. Tickner

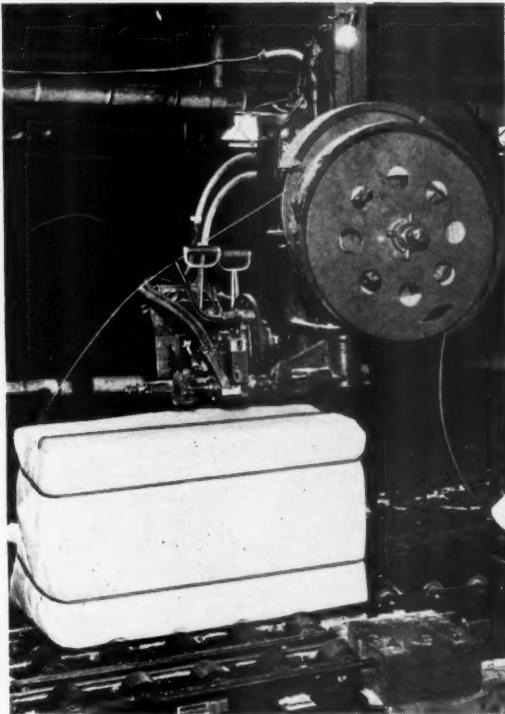
Tumwater Stockholders Vote Refinancing

Stockholders of the Tumwater Paper Mills at Tumwater, Wash., voted unanimously on September 8 to ratify a program of refinancing which had been put before them. It is understood that new contracts for disposing of the mill's output have been lined up and that the plan advanced was in line with the fulfillment of these contracts. It is understood also that material additions to the present plant may be made.

No details concerning the action taken by the stockholders at the meeting were given out, but it was stated by Secretary R. L. Shepherd that "the stockholders unanimously voted to adopt the plan, which carries refinancing and other provisions."

Allis-Chalmers Develops Enclosed Motor

A new line of totally enclosed, fan-cooled motors, 1 to 50 h.p., has been developed by Allis-Chalmers Manufacturing Co. In this new design, all of the active parts, such as, stator core, stator winding and the rotor, are completely enclosed, preventing contact of outside air, dirt, dust, fumes, moisture, etc., with the interior or active parts. Heat is carried away by a sufficient volume of cooling air forced around and across those parts which conduct the heat from the interior to the outer surfaces. A circumferential air jacket controls the path of cooling air. Solid cast iron bearing housings are attached to stator end heads with machined fit, which, with grease packed bearings, form a perfect end closure.



The Acme Weldfast sealed joint, electrically spot welded at two points, is practically as strong as the strap itself.

ACME WELDFAST STRAPPING MACHINE AN IMPORTANT LINK IN THE FIDALGO SYSTEM

THE above illustration shows the Acme Weldfast installation in the mill of the San Juan Pulp Manufacturing Company of Bellingham, Washington, for tying bales of pulp manufactured by the Fidalgo System.

This semi-automatic machine, especially designed for the purpose, provides the fastest and most efficient means for the application of flat steel strap. It tightens and electrically welds straps, eliminating waste in overlap and cost of seal. The specially designed carriage and conveying system enables the operator to apply two to four bands with but one-quarter turn of the bale.

May our experienced engineers handle your strapping problem?

ACME STEEL COMPANY

General Offices—2840 Archer Ave., Chicago

LOS ANGELES
300 Avery Street

SAN FRANCISCO
200 Davis Street

SEATTLE
114 Railroad Ave. S.

VANCOUVER, B. C.
848 Cambie St.

Among Us Old Timers

Had you lived in Portland back in the 80's, you might have witnessed the unusual sight of a small boy trudging down Front Street behind a push-cart piled high with candy boxes. That boy would have been Felix L. Dielschneider, present head of the Oregon Paper Box Factory, who at that time was delivery boy for the late Otto Roenicke, Portland's first box maker.

"I used to start out with a load so high I couldn't see over it," recalled Mr. Dielschneider. "I had stakes



Felix Dielschneider in His Shop of Thirty Years Ago

on the side of the old cart so I could pile on as many as 500 candy boxes. While the loads were secured with string, I used to have hard luck occasionally, as the wind would work in underneath and blow off the boxes. There were no paved streets then, and the mud at times was almost knee deep. Sometimes I'd get stuck and have to get someone to help me out. My worst trouble was with muff boxes and ladies' hat boxes because of their shape.

"For six years I delivered boxes at \$3 a week, beginning when I was 13 years old. When I had been with the house 10 years, I was getting \$12 a week. Some of the girls didn't get very good wages either. They used to get from \$2.50 to \$3 a week, and work from 7 a. m. until 6 p. m., Saturdays included. Often it was as late as 8 o'clock before we were through. A few who could turn out 200 candy boxes a day got top-notch wages, being paid seventy-five cents a hundred boxes. The boxes were 10 by 6, and from 2½ to 5 inches deep. Everything was done by hand.

"One of the first pieces of equipment in the old plant was an old hand-power Marshall scoring machine. All board had to be measured and knives set accordingly. I believe it was installed in 1875. Along with the layout was a Marshall shears and corner cutter, the latter being operated by foot power. Glue pots heated over gas plates connected by hose to the gas lights were also a feature of that time. No power machinery was added until 1902. I had to threaten to quit before I

could get the boss to install modern equipment.

"We used strawboard exclusively for many years, the product coming from Germany. The price for material then was about the same as now. Introduction of glass shelves in the stores stimulated demand for boxes, as merchants had to discard the old wooden containers because of their weight.

"After working 18 years for Mr. Roenicke, I went to Spokane, where I formed a partnership with F. C. Stettler. Three years later I returned to Portland and bought out my employer who died 18 years ago. While the business has been moved from time to time, it has been in continuous existence more than a half century, being the oldest box factory in Oregon."

Buist Looks Over Northern Territory

"Seattle is certainly growing," remarked Norman A. Buist of the Buist Co., on the occasion of a visit to the Northern metropolis last month. "I am surprised at the amount of new building in Seattle and the apparent general activity."

Mr. Buist drove up on the Pacific Highway, stopping for a brief vacation on the Oregon Coast with friends and relatives.

Although far from a veteran in years, Mr. Buist is by no means a stranger to the paper trade on the Coast. His father was in the business before him, so the name itself is somewhat of a fixture in the paper industry of the Coast.

The Buist Co. acts as Pacific Coast representative for D. S. Walton & Co., manufacturers of toilet papers, and the McLaurin-Jones Co., manufacturers of fine papers which are used extensively in the paper box industry.

"We cover the Pacific Coast and maintain two offices, one at 200 Davis St., San Francisco, and one at 641 Cotton Exchange Building, Los Angeles. We are truly factory representatives because we know at all times just what our mills are doing and are able to quote figures right on the spot. In this day of speed one has to keep in close touch with his field. Mail scarcely will do, air mail is often too slow, and telegraph is more often the order of the day.

"There is room for improvement in the ethics of paper selling. Price is too often the point of judgment. We don't worry about the fellow who knows his costs, but the fellow who scouts orders without regard to cost often can lay claim to no higher rank than peddler, but he does make it mean for the man who is trying to do business on a business basis."

B. P. Lewis is the second member of the Buist Co.

Coast Papers Go Into Eastern Markets

Pacific Coast papers which have been going into the market on the Atlantic Coast recently have created no great ripple in the trade there as yet, according to one man who has recently returned from an Eastern trip. So far some bonds, book and wrapping papers have entered the Eastern field, but "the market quickly soaks up this tonnage. I find some of these Pacific Coast papers earning favor in the Eastern market, because of quality, and I think this point is highly important, for it is imperative that the Coast build up a reputation for quality in order to win a wider recognition in this field. Paper from this region is 'Pacific Coast', regardless of the mill, and if poor stocks are dumped in there it creates a bad name for all Pacific Coast papers. There is a need to take a pride in the product and see to it that 'Pacific Coast' is synonymous with 'quality' in paper."

HANS LAGERLOEF
President

ORVAR HYLIN
Vice-President

MAURICE LONDON
Secretary



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New Models
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EQUIPMENT

Manufacturers of, and dealers in, equipment used by pulp and paper mills, board manufacturers, converting plants, paper merchants, or any other branch of the industry may make their announcements in this department.

*New Dealers
New Branches
Appointments*

Minton Vacuum Dryer Wins Recognition

In recognition of his contribution to the technical progress of the pulp and paper industry, Mr. Ogden Minton, inventor of the Minton Vacuum Paper Machine Dryer, is to be presented with a gold medal by the Technical Association of the Pulp and Paper Industry.



OGDEN MINTON

The presentation is to be made on Wednesday evening, September 26, 1928, at a banquet to be held at Wasau, Wisconsin, as a part of the fall meeting of TAPPI.

The Minton vacuum dryer has been hailed by the industry as an outstanding development. It is ranked with the invention of the fourdrinier. The honor now being bestowed upon Mr. Minton has been duly earned, for Mr. Minton has for several years given his untiring energy to solving the problem of vacuum drying, and his contributions to technical literature on the subject have been most enlightening.

Ideas alone have little value just as such. There remains to be done a great deal of work in applying the idea in theory to the hard test of commercial use. The Minton dryer has done just that. There is now in operation at the Price Brothers' mill at Kenogami, Quebec, a Minton Vacuum dryer. This machine, which has been in continuous operation since September, 1927, makes a sheet of news which trims 144 inches wide. It has been operating at 700 feet per minute. A vacuum of approximately 28 inches of mercury is constantly maintained with only a modest size dry vacuum pump.

Significant of the success of this first installation is the fact that Price Brothers have ordered and are now installing two 234-inch vacuum dryers, designed to run at 1200 feet per minute, at their Riverbend mill at Quebec.

It is pointed out that the Vacuum dryer for the first time in history offers the paper maker a positive technical control of his drying process. It operates independently of weather conditions, is only half as long as a standard dryer section of equal capacity, has a thermal efficiency of approximately 100 per cent, and offers opportunities for better and cheaper paper production.

In operation no hood is needed, no vapors are set free in the machine room, and all the heat used to dry the paper is returned in the form of heated water in the hot well of the condenser to be used where needed in the paper mill. Dryer felts are only half as long and the claim is made that they will last twice as long, bringing the felt cost to one-fourth of the figure in present practice. A very low drying temperature—100 degrees F.—is used, giving a stronger, better sheet, with higher pop test. Less power is required, and steam consumption is reduced about one-half in some cases, the manufacturers claim.

In production costs the installation at the Price Brothers mill is said to have broken all records and is showing a saving in conversion costs, over identical machines not fitted with vacuum dryers, of \$2.45 per ton of paper made.

The New H-E Power Feed Chipper

One of the recent additions to the wood room equipment put on the market by the Hesse-Ersted Iron Works of Portland, Oregon, is the power feed chipper. This machine is particularly adapted for short wood, although it will handle wood of any length that may be fed to the standard disc chipper. The power feed consists of multiple strand chain with specially designed attachments, traveling in the feed chute. At the lower end of this chain is a shoe so designed as to hold the wood in position to the shortest possible length. The chain is driven directly from the chipper and has a definite speed ratio to that of the latter so that the wood is forced against the disc at a uniform rate. The shoe prevents the last end of the wood from turning so that no slivers are produced. The result is a practically uniform chip, presenting end grain throughout. All bearings on this chipper are of the SKF roller type, and the disc is made of solid cast steel. The power feed may be adapted to any size disc made by Hesse-Ersted. The San Juan Pulp Manufacturing Co. at Bellingham, has installed one of these chippers and excellent satisfaction is reported.

Griffith Recovers Large Newsprint Roll

Since increasing facilities for recovering large press rolls the Griffith Rubber Mills, Portland, has completed a second job of covering a 236-inch roll, the order being filled for the Washington Pulp & Paper

(Turn to page 58)



Paper Making Machines

Fourdrinier
for
Type Machines

Newsprint
Book Paper
Bond Paper
Wrapping Paper

We also make—

Cylinder Type Machines
for Wrapping and
Bond Papers

Yankee Machines and
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Machines

Charles Walmsley & Co.
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WORKS
LONGUEUIL, QUE.

OFFICE
MONTREAL, QUE.

PACIFIC PULP & PAPER INDUSTRY

(Continued from page 56)

Corp. at Port Angeles, Washington. Twenty-four hundred pounds of rubber were required to cover the journal, and so accurately was the work done that the plastometer test showed a variation of not more than a half a point. The roll was covered with one and one-fourth inches of rubber.

The first order for the same size job, which was placed by the Hawley Pulp & Paper Co. at Oregon City, necessitated installation of an extra large vulcanizer, or "kettle," as this piece of equipment is known around the shop. The steel "kettle" has a length of 34 feet, with a diameter of 5 feet.

The two rubber covering jobs are the largest ever placed on press rolls west of Chicago, according to U. A. Keppinger, assistant manager.

K. B. Hall Heads Portland Equipment Office

Mr. K. B. Hall has been appointed, effective August 15, as manager of the Portland office of the Buffalo Forge Co., and Buffalo Steam Pump Co. Headquarters have been established at 218 Securities Building. The Portland office will be under the jurisdiction of the Seattle office. Mr. Hall is well acquainted in the paper industry of the Coast. He is a mechanical engineer of long experience and is recognized as an authority on pumping problems. He will be available for sales and service in the Northwest.

Walker Pulp Stones Make Good Record

A shipment of Walker pulp stones consigned last May by the Pacific Coast Supply Co. to the Atlantic Coast for installation in one of the largest Eastern mills is reported by the bureau of tests of that mill to be making very high quality pulp, according to W. R. Weill, manager of the supply company. The cost was reported as less than English pulp stones. A repeat order for the Pacific Coast Pulp stones has been placed.

British Paper Mill Engineer Visits Pacific Coast

Mr. T. D. Nuttall from Bury, Lancashire, England, called at several Pacific Coast Paper Mills during August. Mr. Nuttall is managing director of the old established firm of Bentley & Jackson, Lodge Bank Works, Bury, England, and is considered an international authority on certain features of paper mill equipment.

Paper Industry's Longest Telephone Conversation

Mr. W. P. Hawley, Jr., vice-president of the Hawley Pulp & Paper Co., at Oregon City, Ore., called the long distance telephone operator on September 6 and said:

"I wish to speak to my father, Mr. W. P. Hawley, Sr., at Bad-Nauheim, near Frankfort-on-the-Main, Germany."

The call was completed at 3:16 p. m., Oregon City time—12:16 a. m., September 7, at Bad-Nauheim—and conversation was exchanged, as clearly as though it were merely carried over a local line, so Mr. Hawley, Jr., said afterward.

Officials of the telephone company in Portland said that the conversation was the longest message carried from Oregon. It is more than likely also that the conversation holds the long distance record for the pulp and paper industry. Some 7,000 miles intervened between the speakers.

No special arrangements were made for the call. The younger Mr. Hawley simply took a chance on be-

ing able to locate his father, as he knew he would be at Bad-Nauheim on that day. Mr. Hawley, Sr., is on a trip around the world.

Mr. Hawley, Jr.'s voice was carried to New York by wire and then broadcast from Rocky Point, N. Y., to Cupar, Scotland. Here it was again picked up by wire and carried through to Germany. Mr. Hawley, Sr.'s voice was carried to London by wire and radioed from Rugby, England, to Hulton, Me., and then by wire to New York and through to Oregon City.

Work Halted On Astoria Project

Grading work on the site of the Northwestern Pulp & Paper company's mill at Astoria was suspended shortly before the middle of August by what was announced as a temporary delay. It is understood that the work was interrupted for a time due to changes in the company's plans.

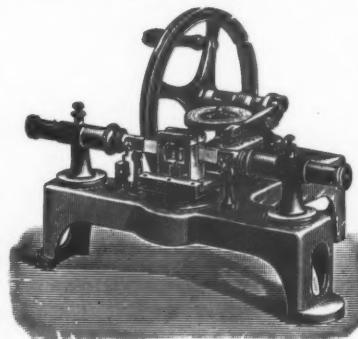
It is known that western officials of the company have been in communication with eastern directors for some time, although the subject of the conversations was not announced and it has not been indicated whether it has direct connection with the construction work on the mill or not.

The excavation and grading work for the Northwestern mill was about three-fifths complete when operations were suspended.

Murray Making Trip to South

Mr. J. L. Murray, director of sales promotion for the Everett Pulp & Paper Co., left for California points on September 16 where he will contact distributors and the mill's representatives in the southern territory.

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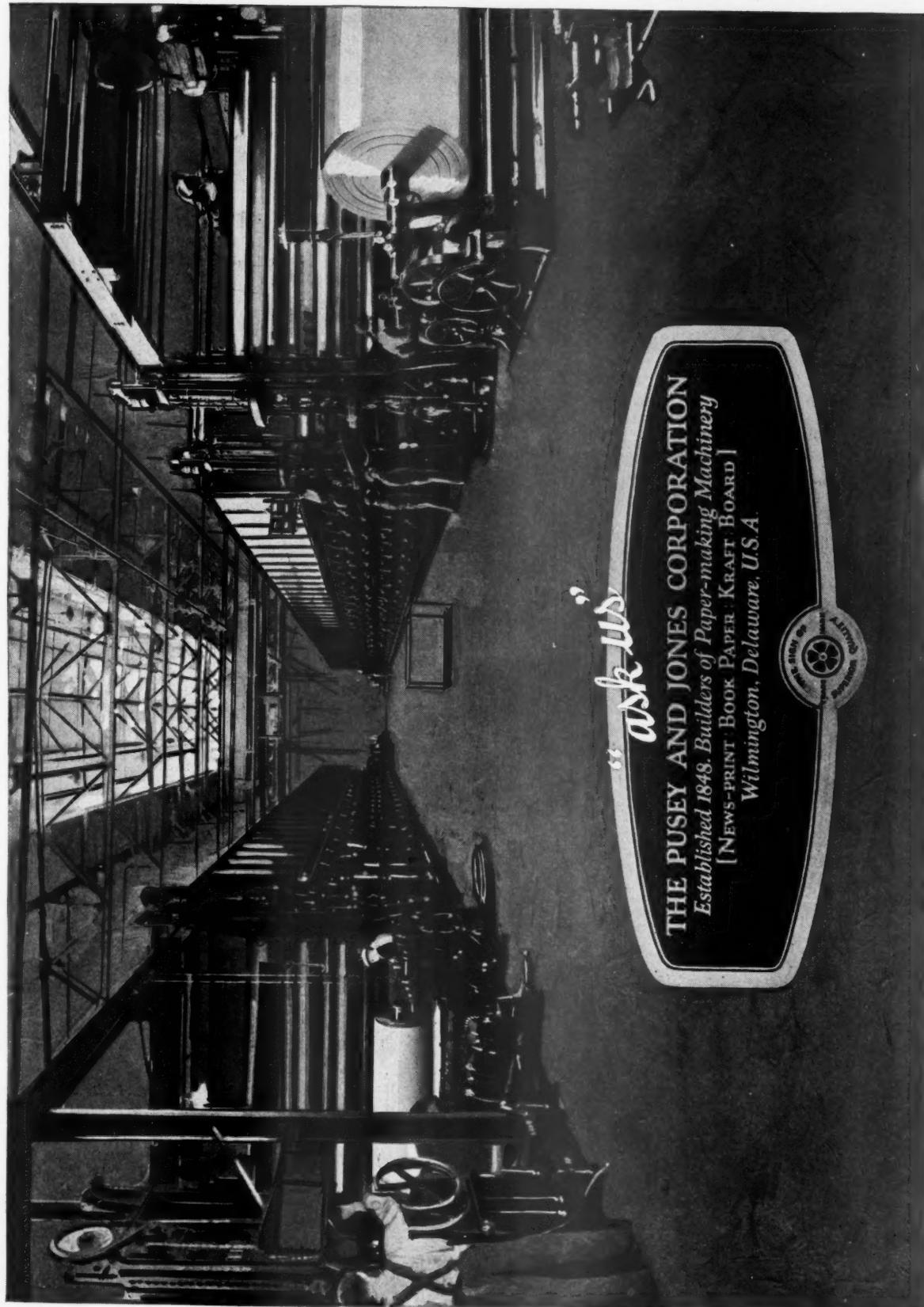
Write for Catalog of Schopper Standard Paper Testers. A complete line of the world's Standard Precision testing machines.

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[NEWS-PRINT BOOK PAPER: KRAFT BOARD]
Wilmington, Delaware, U.S.A.



Illustrating two 178" Kraft fourdrinier machines built by The Pusey and Jones Corporation for the Brown Paper Mill Co., Inc., West Monroe, La.

Entire contents of this advertisement copyrighted 1928 by The Pusey and Jones Corporation, Wilmington, Delaware, U. S. A.

PACIFIC PULP & PAPER INDUSTRY

Hammermill Orders Piling For New Mill

Approximately 6000 piling to be used in the foundation of the 50-ton fine paper mill which the Hammermill Paper Co., of Erie, Pa., proposes to build at Hoquiam, Wash., will be taken from the Joe Hass place north of Lake Quinault in the Grays Harbor country. Crews went into the timber late in August to begin getting out the long poles. The mill of the Grays Harbor Pulp Co. which will go into operation this month, and adjoining which the Hammermill plant will be erected, was built on very deep piles. The site is near the mouth of a river where the silt is deep. The pulp mill sits on a veritable forest of long piles. Ground work for the paper mill will be of the same general type. While the terms of the contract for the Hammermill piles were not made known, it is understood that the piling was purchased on a stumpage basis, and that the timber will be removed by the purchasing company. The timber on the Hass place was described as among the best piling material found in the Grays Harbor district.

W. S. Lucey, who is to be the Hammermill representative on the job, arrived on the Coast about Sept. 1.

Fir-Tex Staff Reveals Strong Line-Up

Announcement of the list of officers and directors of the Fir-Tex Insulating Board Co., which was made following the first meeting of the stockholders held at Portland on September 4, brings to light as associated with the company some of the best known men in Pacific Coast business circles.

The following directorate chosen: Charles E. Dant, Portland, chairman; Hamlin F. McCormick, St. Helens, president; Kenneth D. Dawson, Portland, vice-president; Arthur E. Millington, vice-president and general manager; Tom G. Taylor, secretary-treasurer. Other members of the board are Herbert Fleishhacker, San Francisco; John S. Baker, Tacoma, Washington, and Franklin I. Griffith, Portland.

Mr. Dant is senior member of Dant & Russell, exporters, and one of the leading figures in the lumber industry on the Pacific Coast. Mr. McCormick is a prominent Oregon lumber operator. Mr. Dawson is a widely known shipping man, president of the States Steamship Co. and member of the executive council of the Associated Oil. Mr. Millington is a nationally-known pulp and paper mill engineer. Mr. Taylor is well known through his financing operations, having directed financing of several Coast pulp and paper mills.

Fleishhacker Named

Mr. Fleishhacker is an internationally-known banker and president of the Anglo, London & Paris National Bank in San Francisco, and a director in the Crown Willamette Paper Co. Mr. Baker is president of the Fidelity Trust Co., and chairman of the board of the Tacoma-Oriental Steamship Co. Mr. Griffith is president of the Portland Electric Power Co., and has in the past been associated in a legal capacity with leading pulp and paper mills of the Coast.

The company, which was incorporated early in August, plans construction of a \$2,000,000 plant for the manufacture of insulating and building board, using wood waste. Everything on the tree can be utilized, with the exception of leaves and sawdust, Mr. Millington states. A study of the markets discloses an increasing demand for this class of building and insulating board, he indicated.

The company, which has been incorporated under the laws of Oregon, has an authorized capital stock of 50,000 shares divided as follows: 25,000 shares Class

"A" par value \$100 per share; 25,000 shares Class "B" no par value. The Class "A" common stock is cumulative and has prior rights as to dividends and assets and will be paid out of the net earnings of the corporation, the first \$7.00 per share available for dividends. When further dividends are available in that year the Class "B" stock shall receive not to exceed \$7.00 per share. The "B" stock is given as a bonus. The company estimates its potential earnings at \$20.00 per share. About \$500,000 has been subscribed for stock to date, Mr. Taylor stated early in September.

Plans and specifications for the new plant, which is to be erected at St. Helens, Oregon, are being pushed along and it is hoped by the company officials that construction will get under way before the present year is out.

First announcement of the plans of this company with details of product and plant were published in the June, 1928, issue of PACIFIC PULP & PAPER INDUSTRY.

Schafer Brothers Lease West Mill at Aberdeen

The A. J. West mill, closed since shortly after the failure of the Hayes & Hayes bank more than a year ago in Aberdeen, resumed operations this month under the direction of the Schafer Brothers Lumber Co. The Schafer Brothers company has acquired a six months' lease on the mill.

The A. J. West company was reorganized almost a year ago under the name of the West Lumber & Pulp Co. and had planned to operate the saw mill in conjunction with a 100-ton pulp mill which it was planning to construct. The company experienced some reverses, however, it is alleged, and some time ago the mill was sold at a sheriff's sale.

The West group, however, is still planning the construction of the pulp mill although they are giving no further details. They are now working on new plans for financing the venture and report that the financing appears to be going through satisfactorily. They stated that the pulp mill may be under construction before 1928 is out. The site is adjacent to the lumber mill on the Chehalis river near Junction City, about three or four miles east of Aberdeen. They expect to regain possession of the saw mill, too, it is inferred.

The saw mill is one of the large plants in the Harbor district, having a capacity of 200,000 feet per eight hour shift. The mill, when under full production, will employ about 200 men. Under the provisions of the lease the mill may be released at the end of the six months' period providing the owners of the mill do not desire it for operations in connection with the proposed pulp mill.

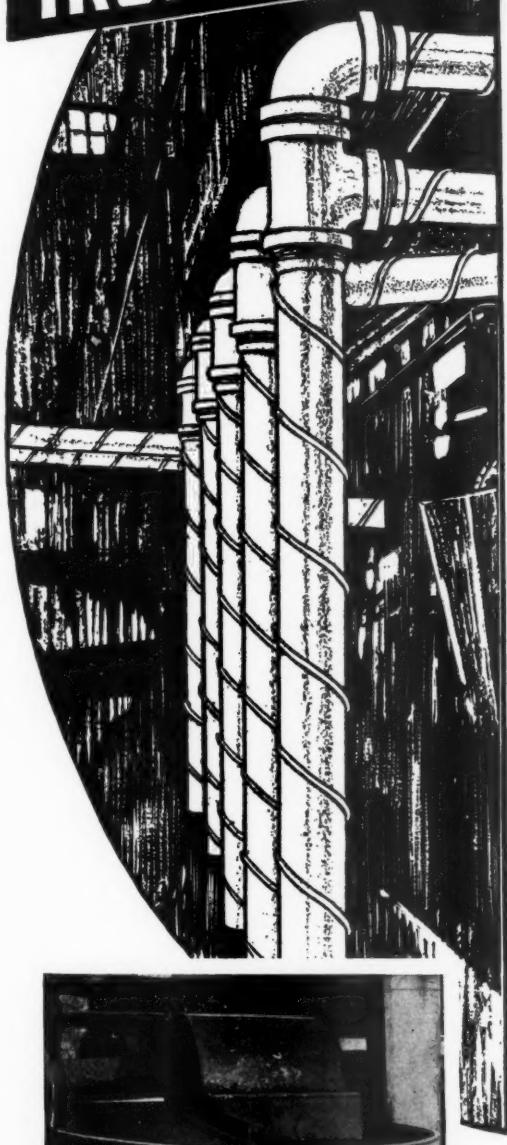
Some see in the securing of the lease a chance that the Schafer group, one of the largest logging and lumber operators in Southwest Washington, may enter the pulp industry. It has been rumored from time to time that this concern was figuring on entering the pulp and paper business but nothing specific was ever done or said.

Aberdeen Pulp Mill Project Inactive

No further report of the plans of the Pacific States Pulp & Paper Co. were given during August. The company, which announced more than a year ago that it intended to build a large mill on the Chehalis river near Aberdeen, Wash., and secured a 30-acre section of ground for a site, still has offices at Aberdeen but has done nothing further toward start of construction.



IRON ADDS YEARS OF SERVICE



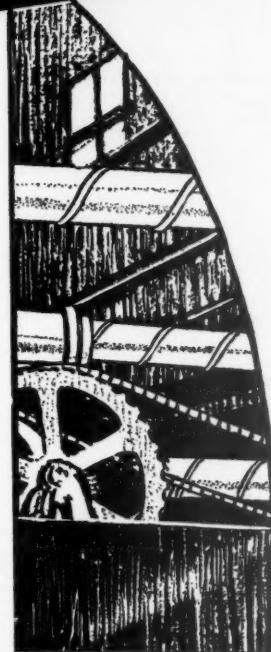
Toncan Iron is available in sheets, plates, bars, strips, seamless tubes and wire, and finds an ideal application—because of its unusual rust and corrosion-resisting qualities—on paper machines and beater hoods, filter housings, save-all tanks, digester drums, perforated screens, and for roofing and siding on buildings.

TONCAN, the super-iron which resists rust and corrosion longer than any similar metal used in the manufacture of pipe, is now the basis of Naylor SPIRAL-WELD Toncan Iron Pipe which assures trouble-free service and four to fourteen times longer life for paper mill conveyance lines.

Toncan is pure iron, scientifically combined with copper and mo-lyb-den-um to form a rust and corrosion resisting metal of such qualities as never before attained in a commercial iron. It is light in weight for ease and economy of shipping, handling and installing. It is not materially affected by rust and corrosion from acids and alkalies, which so quickly destroy pipe of other materials.

Toncan Copper Mo-lyb-den-um Iron is a metallurgical achievement. In all kinds of sheet metal applications it resists rust and corrosion, the ravages of severe weather conditions, or heating and cooling that cause ordinary iron to fail rapidly.

The new Toncan book, "The Path to Permanence," is valuable to manufacturers who desire complete information on this super-iron. Send for it.



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STATEMENT OF ACCIDENT EXPERIENCE—Month of July, 1928

Rank	Company	Number Employees	Man Days Worked	Number Lost Days Accidents	Total Days Lost	Lost Days Per 1000 Man Days
1	Pacific Coast Paper Mills	53	1,148	0	0	0
2	Tumwater Paper Mills	40	331	0	0	0
3	Rainier Pulp & Paper Co.	226	5,800	2	2	.34
4	Everett Pulp & Paper Co.	352	9,836	2	12	1.22
5	Crown Willamette Paper Co., Camas	1,082	32,171	3	41	1.27
6	Washington Pulp & Paper Co.	364	10,036	3	27	2.69
7	Inland Empire Paper Co.	288	7,580	2	28	3.69
8	Fibreboard Products Co., Sumner	81	2,535	1	11	4.34
9	Cascade Paper Co.	213	4,786	2	24	5.01
10	Fidalgo Pulp Mfg. Co.	82	2,285	2	16	7.00
11	Fibreboard Products, Inc., Port Angeles	290	6,035	3	75	12.43
12	Longview Fibre Co.	350	9,800	11	124	12.70
13	Columbia River Paper Mills	281	8,478	8	109	12.86
14	San Juan Pulp Mfg. Co.	115	3,392	2	97	28.60
Total		3,779	104,213	41	566	5.43

The following mill not reporting: Pacific Straw Paper & Board Co.

Camas Mill Heads List in Safety Contest

The price of safety is eternal vigilance. The safety contest inaugurated by Washington mills a few months ago has developed some interesting jockeying for positions as each struggles toward the top. The Camas mill of the Crown Willamette Paper Co. has moved up from fourth to first place since April 30, Pacific Coast Paper Mills has dropped off from first to fourth, Washington Pulp & Paper Corp. has moved up two notches from seventh to fifth, Cascade Paper Co. has moved up from ninth to seventh, Longview Fibre Co. has moved up to eighth from tenth, while Everett Pulp & Paper Co. has held its average at second. Rainier Pulp & Paper Co. has entered the lists with the July report and starts off in third place with a total of only .34 lost days per 1,000-man days worked.

And now, how about these few that are trailing in the rear? Isn't this a place where consistency is undesirable? Let's take hold of this matter of safety with a new vigor, examine into causes, pep up the whole crew and make this race for first place a bit sharper.

W. J. Pilz, manager of the Everett Pulp & Paper Co., who is compiling the monthly statistics, states that the monthly reports are coming in better, but that a few still have to be "reminded". He asks full co-operation and requests that all reports be turned in not later than the tenth of the month.

This department of PACIFIC PULP & PAPER INDUSTRY has been devoted to the cause of promoting safety in the Pacific Coast mills and will welcome appropriate material and photographs. Address your communications to PACIFIC PULP & PAPER INDUSTRY, 71 Columbia St., Seattle, Wash.

Ship Crashes Hog Fuel Barge

A coastal steamer bound from Seattle to Victoria on August 26 crashed in the fog into a hog fuel barge loaded with saw mill waste from Tacoma lumber mills and en route to the Washington Pulp & Paper Corp. mills at Port Angeles. The barge, one of the Foss line, was being towed by Foss Tug No. 18. The crash scuttled the barge but the tug was able to beach the tow with a loss of half the cargo.

STATEMENT SHOWING RELATIVE STANDING OF PAPER MILLS IN ACCIDENT EXPERIENCE BASED ON TIME LOST PER 1,000 MAN DAYS, FOR 1928, DURING PERIODS

TO DATES SHOWN

	April 30 1928	May 31 1928	June 30 1928	July 31 1928
Crown Willamette Paper Co.	4	2	1	1
Everett Pulp & Paper Co.	2	1	3	2
Fibreboard Products Inc., Sumner	3	3	2	3
Pacific Coast Paper Mills	1	4	4	4
Washington Pulp & Paper Co.	7	6	5	5
Inland Empire Paper Co.	5	5	6	6
Cascade Paper Co.	9	7	7	7
Longview Fibre Co.	10	8	8	8
Fibreboard Prod. Inc., Pt. Angeles	6	9	9	9
Tumwater Paper Mills	11	10	10	10
Columbia River Paper Mills	8	11	11	11
Fidalgo Pulp Mfg. Co.	12	12	12	12
San Juan Pulp Mfg. Co.	13	13	13	13

Scanlon Donates Clubhouse to Powell River

M. J. Scanlon, vice president of the Powell River Co., Ltd., came out from Minneapolis recently to make a personal inspection of the company's mills and he returned east well satisfied.

Powell River people were equally well pleased with Mr. Scanlon's trip and that is partly explained by the fact that while the executive was at the mill town he promised to have a golf clubhouse built at his own expense as a gift to Powell River. A nine-hole course has been in use at Powell River for some time and three more holes are now being added, but the accommodation for the pro and club members when not actually on the course has been anything but adequate. Mr. Scanlon recognized this and volunteered to remedy the situation. A spacious clubhouse will be built at once, with lounge room, tea room and locker room and there will also be a workshop and living quarters for the pro.

One of the reasons for Mr. Scanlon's present visit to the coast, it is understood, was in connection with the closing down of the Brooks-Scanlon-O'Brien logging camps at Stillwater, B. C. The equipment used at Stillwater is being transferred to the newly established logging camp of the Campbell River Timber Co., which recently acquired extensive holdings at the north end of Vancouver Island and will build more than twenty miles of railway to bring the logs to the coast.

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FOR

SPAULDING PULP & PAPER CO. NEWBERG, OREGON

THE FOREIGN MARKET

Better Outlook for China Trade

According to the Shanghai office of the Bureau of Foreign and Domestic Commerce, the discouraging situation in the market for the lower priced papers is beginning to show improvement. Owing to recent disturbances in the country, both importers and dealers found themselves in possession of large stocks of newsprint and M. G. cap papers purchased at a figure above current prices during the latter part of last year. At the same time large quantities of low priced Japanese papers came upon the market, which depressed prices still further. Most of these high-priced stocks have now, however, gone into consumption and some hope of improving conditions may be entertained for the latter part of 1928. There are indications of a tendency to import higher grade papers than formerly and at the same time the domestic production of paper of improved quality is increasing in the northern mills.

Ceylon Imports of Paper and Paper Products

Imports of paper and paper products (exclusive of printed matter) into Ceylon during the first five months of the current year were valued at approximately \$442,913, according to the Paper Division, Department of Commerce. The greater part of the imports consisted of printing paper (1,132 long tons) and packing papers (1,746 tons), boards (280 tons) and writing paper and envelopes (379 tons) making up most of the remainder.

The bulk of the imports came from the United Kingdom, which supplied 46 per cent of the printing paper, 64 per cent of the writing paper, and practically all of the packing paper. Other competitors in the market were the Netherlands, which furnished 60 per cent of the board importations; Austria, Sweden, and Norway, which supplied a certain amount of printing papers, and Germany, which together with Sweden was the source of supply for a considerable amount of the writing and miscellaneous papers imported.

Imports from the United States during this period amounted to only \$13,024, comprising 1,232 pounds of writing papers, 1,456 pounds of boards, 23 tons of wrapping paper, and 14 tons of miscellaneous papers.

Increase in Finnish Pulp and Paper Exports

Exports of pulp and paper from Finland during the first six months of 1928 were valued at 868,200,000 Finmarks (approximately \$21,878,640) compared with 800,000,000 Finmarks (\$20,160,000) during the corresponding period last year. With the exception of writing paper all groups show an increase over 1927. Shipments comprised chiefly 216,956 metric tons of chemical pulp, 58,144 tons of mechanical groundwood, 20,725 tons of paperboard, 84,266 tons of newsprint, 19,756 tons of wrapping paper and 1,911 tons of writing paper. (Commercial Attache Frederick B. Lyon, Helsingfors.)

PRODUCTION OF NEWS PRINT IN JAPAN

	Short Tons
January	20,587
February	19,580
March	21,067
April	18,664
May	20,444

Decrease in Swedish Pulp and Paper Shipments

Exports of both pulp and paper from Sweden during the first five months of the current year have experienced a considerable decline compared with the corresponding period in 1927, according to Swedish official statistics, forwarded to the Department of Commerce.

Shipments abroad of wet mechanical pulp up to the end of May totaled only 63,512 metric tons compared with 99,563 tons a year ago. An even greater decline was registered in shipments of unbleached sulphite which fell from 181,248 tons to 98,549 tons, while unbleached sulphate dropped from 80,924 tons to 56,224 tons and bleached sulphite from 39,620 tons to 25,696 tons comparing the same periods.

Board shipments of between 12,500 tons and 12,600 tons were about the same, but exports of newsprint decreased from 71,592 tons to 49,895 tons and other paper from 83,401 tons to 62,880 tons.

Fidalgo Pulp Goes To Argentine

The San Juan Pulp Manufacturing Co. at Bellingham made shipments of unbleached pulp to the foreign market during the last month. One consignment of several hundred tons went to a mill in the Argentine. Further negotiations are being made, it is understood, for future export shipments. Installation of a new type heavy duty baler at the San Juan mill has made feasible the water shipments by enabling the mill to produce a bale of high compression that earned favorable low water rates.

Increase in Imports of Paper at Tientsin

Imports of writing, art printing, bank note, parchment, pergamin, and greaseproof papers through the port of Tientsin show an increase from 402,608 Haikwan taels in 1926 to 617,020 Haikwan taels (Haikwan tael equivalent to approximately 70 cents) in 1927, according to a report from Consul General C. E. Gauss of that port. The bulk of the 1927 shipments arrived from Japan, which supplied 65 per cent. The United States, which ranked second in importance, furnished 17 per cent, and the bulk of the remaining shipments came from the United Kingdom and Belgium.

New Crown-Zellerbach Stock Authorized

Crown Zellerbach Corporation, representing a consolidation of the Crown-Willamette Paper Co. and the Zellerbach Corp., was authorized by the State Corporation Department of California in August, to issue 2,000,000 shares of common, 200,000 \$5.00 preferred stock, and 10,740 shares of convertible preferred.

Of the common authorized, 842,310 shares will be issued in exchange for a like number of common shares outstanding; 76,802 will be issued to preferred shareholders; 28,640 to holders of convertible preferred; 52,248 to holders of common as a stock dividend, and 1,000,000 to common stockholders or holders of voting trust certificates.

The 200,000 authorized \$5 preferred will be issued to common stockholders and the 10,740 shares of convertible preferred will go to preferred stockholders in exchange for outstanding preferred.

Osborn Doane, formerly sales manager of the Pacific Coast Paper Co., San Francisco, was engaged in the real estate business this summer at Rio Nido, one of the resorts on the Russian River, above San Francisco.

Announcing

OLIVER UNITED FILTERS INC.

successors to

OLIVER CONTINUOUS FILTER COMPANY *and* UNITED FILTERS CORPORATION

A consolidation effected to advance Industrial Filtration generally and to render better service to all users of Filtration Equipment.

For Economy in Pulp and Paper Production

OLIVER DRUM TYPE

Lime Mud Washers	Ground Wood Deckers
Pulp Deckers	Bleach Washers
Kraft Washers	Save-Alls
	Board Machines

AMERICAN DISC TYPE

Ground Wood Deckers	Sulphite Deckers
	Save-Alls

We will make a survey of your mill requirements and then recommend the type of apparatus most suitable for your conditions.

Factories:

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OLIVER UNITED FILTERS INC.

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150 Southampton Row, WC1

Paris
63 Ave des Champs Elysees

Johannesburg
Montreal
Melbourne

Tokyo
Halle, Germany
Honolulu

Soerabaia, Java
Manila, P. I.
Scheveningen

Wood Penetrability

DR. E. RICHTER*

THE discussion to the paper, named wood penetrability and read by Prof. G. W. Scarth revealed the fact that very little actual knowledge exists regarding practical penetration in the digester.

Prof. Scarth was told that this question is a very important one and he has given good and valuable pictures showing the constituency of wood from a botanical view and his experiments with mercury and also water and Spruce showed the penetration taking place in less than a minute after evacuation.

Unfortunately when practical work with the sulphite or sulphate or soda process is in question the mercury or water experiments with vacuum will not hold true. Furthermore, it is most probable that also the average size of the chips and the age of the wood used will influence the penetration. In the discussion of Scarth's paper W. H. Monsson stated that according to his experience about $\frac{3}{4}$ hour were necessary for Spruce, however, it was not confirmed by experiments on penetrability direct, but was an experience found by a rather subjective method.

Having been in contact with practical work on different kinds of wood and cooking varying sizes of chips, the writer had to develop his own method to face squarely all conditions. Also in some special cases the penetration is of very great importance and it seemed necessary to settle this question at the start, once for all. Otherwise no change of digesting conditions could be made safely and no actual control of any cooking process, the heart of every pulp mill, can be attempted.

Simple Experiment

It is now a very simple experiment to test the penetrability of any kind of wood or chip in a practical way with sufficient accuracy. All we have to consider is the moisture in wood which is always more or less present. I am giving below a few tests for soft woods, for instance, and may state here, that the conditions with different kinds of Spruce (black and white Spruce, European Spruce, Balsam, etc.), are much the same, also with different sizes of chips, although little variations occur. The tests are, however, easily repeated and the method applies with the same accuracy to any case so there is no danger of substantial errors, except the natural moisture in wood is exceptionally low, say much less than 20 per cent.

Description: A suitable sample of chips is taken, part of it is tested for moisture, the rest is divided in so many equal or unequal parts as tests are wanted. The same number of glass bottles with rubber stoppers are prepared in the case sulphite liquor is used for inst. (For alkaline solutions alkali resistant glass can be used). The size of bottles may vary from 250 cc to 1000 cc or more. The neck should be wide enough to pass all sizes of chips through it. Then 100 grs or more chips are exactly weighed several times and filled in the bottles immediately. A suitable amount of acid, corresponding to the quantity used in the digester, which in the case of the Sulphite process is about 3 times as much as the weight of the chips, is poured in, taking good care that the liquor reaches the bottle without spilling or much loss of gas, which can be affected with a glass container having a wide glass tube connec-

tion, and stopcock at the bottom, and filling the bottles with a rubber tube from the bottom. All bottles are quickly filled and closed tight. Immediately after this operation the acid from the container is tested as exactly as possible.

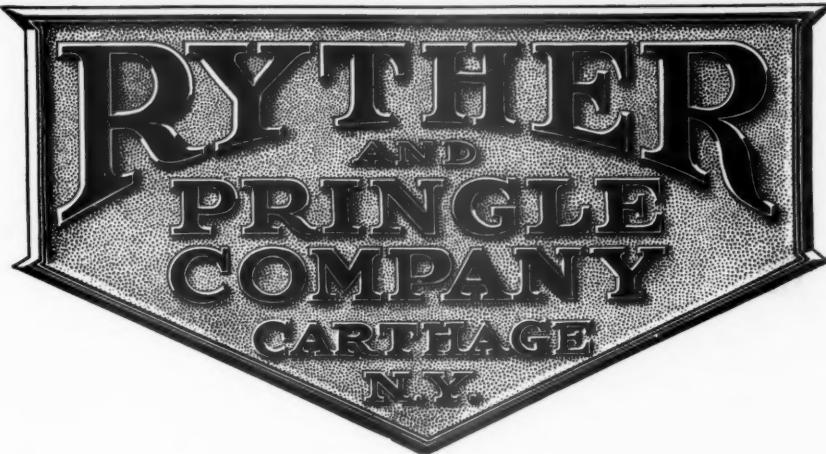
The bottles are then allowed to stand a suitable time at a noted temperature and after one-half hour or one hour, etc., the test bottle is shaken and 1 cc of the liquid tested. If there has not been any loss through careless handling and the penetration has taken place properly, the moisture in the wood is mixed with the acid and the test is lower accordingly.

Some Results

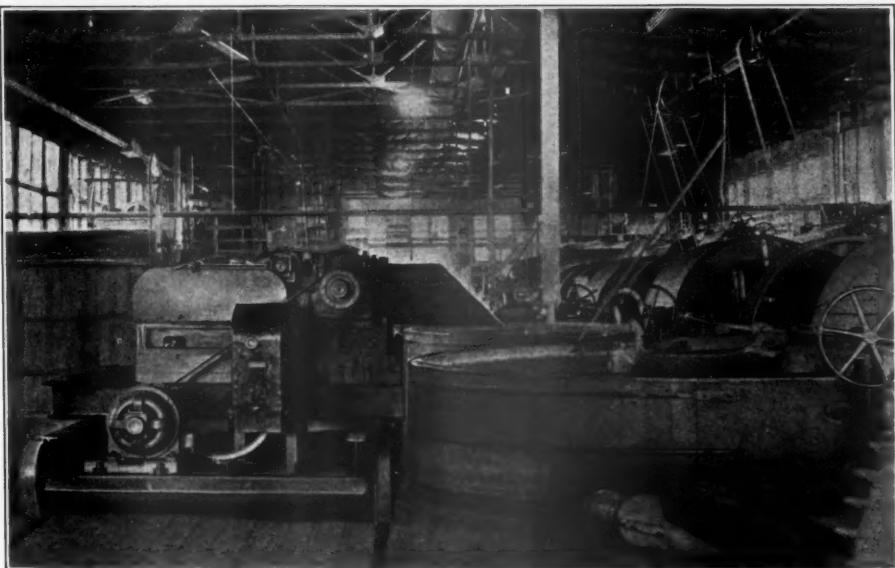
With the moisture test we find the degree of dilution, which is possible in the end if no chemical is combined with the wood substance during the time in question. Using bottle after bottle and being able to check the result of one test with as many other experiments as desired we have a very reliable method which suits all kinds of wood and acideous processes as well as alkaline. The only necessity is, that the wood contains some moisture, the more the better for accuracy. In the following table I will give some results on soft woods (size of chips about $\frac{7}{8}$ inch):

(1)	17°C. Acid: 4,50—3,50—1,00
	Acid: 250 cc
	Chips each bottle: 100 grs.
	Equilibrium: 3,80—2,96—0,84
	Acid after 4 min. 4,20 — 3,22 — 0,98
	Acid after $\frac{1}{2}$ hr. 3,70 — 2,74 — 0,96
	Acid after 1 $\frac{1}{2}$ hr. 3,47 — 2,50 — 0,97
	Acid after 30 hrs. 3,34 — 2,48 — 0,86
	Acid after 100 hrs. 3,20 — 2,40 — 0,80
(2)	40-50°C. Acid: 4,40—3,31—1,09
	Acid: 250 cc
	Chips: 100 grs.
	Moisture: 43,2%
	Equilibrium: 3,75—2,82—0,93
	Acid after $\frac{1}{2}$ hr. 2,88 — 1,96 — 0,92
	Acid after 1 hr. 2,88 — 1,94 — 0,94
	Acid after 18 hrs. 2,50 — 1,76 — 0,74
	Acid after 3 days 2,40 — 1,67 — 0,73
(3)	17°C. Acid: 4,66—3,64—1,02
	Acid: 450 ccm
	Chips: 150 grs.
	Moisture: 42,0%
	Equilibrium: 4,09—3,20—0,89
	Acid after 10 min. 4,26 — 3,26 — 1,00
	Acid after $\frac{1}{2}$ hr. 4,13 — 3,15 — 0,98
	Acid after 4 hrs. 3,91 — 2,95 — 0,96
	Acid after 16 hrs. 3,88 — 2,98 — 0,90
(4)	Europ. Spruce: (large chips). 30°C. Acid: 5,40—4,20—1,20
	Chips: 300 grs.
	Moisture: 34,0%
	Equilibrium: 4,79—3,73—1,06
	Acid after $\frac{1}{2}$ hr. 5,02 — 3,90 — 1,12
	Acid after 1 hr. 4,82 — 3,74 — 1,08
(5)	Penetration with NaOH.: 20°C. Solution containing 9,59% NaOH.
	Chips: 100 grs.
	Sol.: 250 cc
	Equilibrium: 8,0% NaOH.
	After $\frac{1}{2}$ hr. 8,02 8,33 7,55 7,23
	After 1 hr. 7,38 7,38 7,23 7,23
	After 16 hrs. 6,76 6,76 6,45 6,60
	After 3 days 6,92 6,92 6,29 6,60

(Turn to Page 68)



PORTABLE SHREDDER



RYTHER SHREDDER MOUNTED ON TRUCK ARRANGED TO FURNISH FOUR BEATERS

The mounting consists of a standard RYTHER shredder assembled on a truck carrying a twenty-five horsepower motor and compensator. The truck wheels are roller bearing and operate on a seven foot gauge track. The unit is arranged to deliver shredded pulp directly into the beater tubs. For small furnishes this apparatus is very economical because no conveying system is used and there is no cleanup loss from stock over-run.

FOR CANADA REFER
CANADIAN INGERSOLL-RAND COMPANY, LIMITED
10 PHILLIPS SQUARE, MONTREAL, P.Q.

Technical Literature Review

The following abstracts, prepared for the assistance of those desirous of following technical developments in other nations, contain the following information in the order given: Title of paper, author, publication and date in which article appeared, subject matter of article. The abstracts have been prepared especially for this journal by a Pacific Coast man who has had experience both in American and European mills.

Strength of pulp.

G. Porvik.

Paperstidning No. 23; 1926 and 1927. Also: Zellstoff & Papier No. 10; 1928.

Valuable contribution re strength testing. Records 18 points about this subject.

* * *

The structure of crystallized parts of cellulose.

K. H. Meyer & H. Mark.

Berichte No. 61, p. 593, 1928; also Cellulosechemie No. 7/8, 1928.

A very interesting and speculating research work dealing with the molecular connections and the crystallographical structure of cellulose fiber and the changes in structural forms with mercerisation and esterification.

* * *

High pressure steam plant.

G. Lest.

Wochenblatt f. Papierfabrikation, No. 23-A; 1928.

Steam pressure of 1500 to 2200 lbs. p. sq. inch is most economical.

I. Pulp mill using about 90,000 lbs. steam per hour with low pressure, will save net about \$110.00 per day using 1900 lbs. steam pressure.

II. In combined pulp and paper mill also large savings are effected by use of high pressure outfit. Many economical points have not been considered so far, for instance, smaller piping, smaller heat loss, less insulation material used, smaller boilers for the same tonnage, smaller water consumption, etc. Power is in most cases doubled for the same amount of fuel.

NEW BOOKS

Zellstoff u. Papier, Verl. C. Hofmann, Berlin, SW 11. Special number for the meetings of the Pulp & Paper Association, Germany.

Prof. Schwalbe gives an interesting criticism regarding the production of pulp with high alpha cellulose content and also discusses the relative merits of several patents covering the subject.

G. Lest a well-known chemical engineer discusses the advantages of using high pressure steam in pulp and paper mills.

Th. Swanson, a Swedish engineer, gives his experience in drying paper and ventilating the mill, etc.

Wood Penetrability

(Continued from Page 66)

From experiment No. 1 it can be seen, that already after four minutes a large amount of free acid has been taken up by the chips and after one-half hour at ordinary temperature the free acid has reached the equilibrium or exceeded it. The combined sulphurous acid seems to stay somewhat behind and is moving much slower.

Experiment No. 2 at 45-50° C gives the fact that less than one-half hour is sufficient for the free and combined sulphurous acid to penetrate the wood entirely. Since the bottles were rather heavy glass and were placed in an ordinary water bath with a temperature of 50-52° C it was not much use testing any of them after a shorter time, as about 10 minutes are necessary to bring bottles and contents to the temperature required.

Capillary Action

The third experiment shows about the same features. In all cases it is remarkable that the consumption of free and combined acid does not cease when it is entirely

mixed with the moisture in wood, but decreases further slowly. This decrease seems more pronounced in the case of higher temperature. It means that the sulphite cooking process begins very slowly even at low temperature and that not all consumption of acid down to the equilibrium is due to dilution by moisture in wood. It can be expected that from the start some SO_2 becomes chemically combined with the lignin. From other experiments and from general experience however, it is well known that the osmotic and capillary action are of rather high velocity. A third action probably works towards the same goal, although hard to define in this case and certainly different with different kinds of wood, it is the absorption of acid or alkaline solutions by the wood fibre. The continued decrease of strength in acid over the point of equilibrium further proves, that it is not due to moisture leaving the wood without acid entering it at the same rate, which would give a vacuum in the chips, practically with the capillary action and absorption working against it, an impossible state.

Time of Penetration

Considering technical work, which starts at about 30-50° C acid temperature it can be stated according to the experiments, that one-half hour or sometimes less is entirely sufficient for acid penetration into soft woods in form of normal chips. Generally the digester retains some heat, thus increasing the temperature at the start.

All figures given so far apply to rather fresh wood. With dried and seasoned wood, the capillary action is increased while some others may be somewhat decreased, but the experiments quoted will be sufficient to cover the practical side.

Experiment No. 4 with about 10 per cent caustic solution and soft wood shows about the same velocity of penetration and also the action of alkali on wood at 20° C.

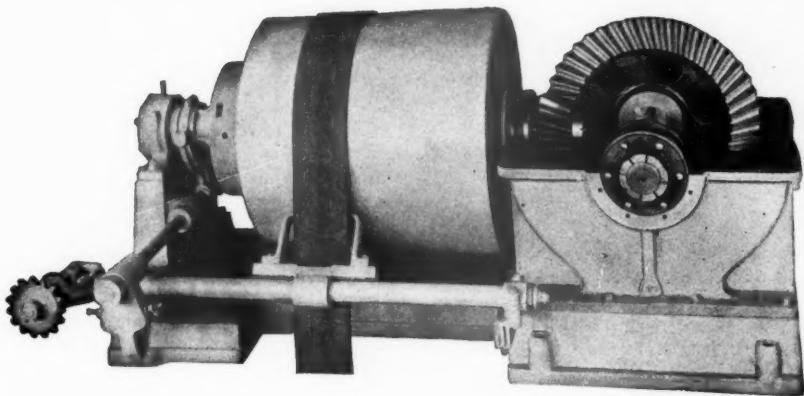
It should be easy enough even for inexperienced workers to make similar tests with all kinds of wood and other cooking liquors. The method given covers at least the practical demand and if anybody has an interest to go into more exact details, he can use the same principle.

With regard to the Masonite-process which was also mentioned several times in the discussion, the feeling that it is closely connected to some modern sulphite processes is certainly right. As we have seen the velocity of penetration is very high, especially at elevated temperatures, but the velocity of the following, so-called chemical reactions is limited and whether we can push them simply ahead by steam or steam and pressure, is rather doubtful. If the first penetration would be the cause for raw or uncooked chips found in the stock later, we should think the bigger sized particles would form the highest amount. In most cases, however, the opposite is true, which means not the penetration is lacking but the circulation and proper cooking time.

Joins Carter, Rice and Carpenter Force

A. E. Woerner has joined forces with the Carter, Rice and Carpenter Paper Co, of Denver and has been assigned the Wyoming and eastern Nebraska territory. He will make his headquarters in Cheyenne. He has covered the Wyoming territory for years for other lines and should be right at home in this new connection.

It is said on good authority that 65 cents out of every dollar banked west of the Cascades comes from lumber.



"M & W" SPIRAL BEVEL GEAR DRIVE STAND

Patent No. 1,567,955. Inclosed Type

BUILT in different sizes to suit power and speed requirements of paper machines . . . Gives accurate regulation of the draws . . . Operates on separate machine units without vibrations or noises . . . No backlash . . . No gear guards required . . . Materially reduces the breaking of the wet paper on wet end of machine, and snapping of paper in the dry part of machine, thereby increasing production . . . Saves power . . . Low upkeep . . . Equipped with a Moore & White High Speed Friction Clutch, with brass and iron discs, which operates quietly, and is easily adjusted from one point . . . Operates from front side of machine to suit mill conditions . . . All bearings are latest type anti-friction (ball or roller bearings).

THE MOORE & WHITE CO.

Paper Mill Machinery

Office and Works, North Philadelphia Station, P. R. R.

PHILADELPHIA, PA.

PACIFIC PULP & PAPER INDUSTRY

Canadian Exports of Pulp and Paper

July, 1928

Canadian exports of pulp and paper in July were valued at \$15,122,162, according to the report issued by the Canadian Pulp and Paper Association. This was a decline of \$379,905 from the previous month, but the decline was seasonal and the total for the month was \$1,448,485 higher than for the month of July, 1927.

Wood pulp exports in July were valued at \$3,896,754 and exports of paper at \$11,225,408 as compared with \$3,939,810 and \$11,562,257 respectively in June.

Quantities and values for the various grades of pulp and paper were as follows:

	July, 1928		July, 1927	
	Tons	Dollars	Tons	Dollars
PULP—				
Mechanical	17,006	478,337	24,655	777,849
Sulphite Blchd.	23,557	1,732,910	20,668	1,592,677
Sulphite Unbchd.	16,719	823,397	15,680	835,137
Sulphite	13,934	821,670	13,640	823,875
Screenings	1,877	40,440	2,758	50,400
	73,093	3,896,754	77,401	4,079,938
PAPER—				
Newspaper	167,456	10,765,033	140,543	9,146,271
Wrapping	1,341	147,938	880	94,302
Book (cwt.)	4,907	45,913	11,465	70,543
Writing (cwt.)	1,101	10,330	707	5,197
All other		256,194		277,426
	11,225,408			9,593,739

For the first seven months of the current year the total value of exports of wood-pulp and paper from Canada was \$109,226,243 compared with a total of \$98,683,491 in the corresponding months of 1927, an increase for this year of \$10,542,752 or nearly 11 percent.

Exports of wood-pulp for the seven months amounted to \$26,236,634 and exports of paper to \$82,989,609, as

compared with \$26,787,095 and \$71,896,396 respectively in the seven months of 1927.

Pulpwood exports in the seven months of this year amounted to 931,357 cords valued at \$8,917,914, which was a decline from the 1,038,988 cords valued at \$10,288,884 exported in the seven months of 1927.

Albany, Oregon, Considered for Pulp Mill

Prospects for a pulp and paper mill at Albany, Oregon, continue to brighten, with a movement gaining impetus for a railroad extending from a close-in timber tract to that city. While no definite announcement was made by the railroad company, members of the Albany chamber of commerce feel reasonably certain that a favorable decision from the railroad company will be forthcoming.

Anticipating such action, J. K. Post of the Willapa Pulp & Paper Co., Portland, in company with E. D. Cusick, prominent Albany banker, and S. H. Graf, professor of the engineering department of Oregon Agricultural College, Corvallis, inspected several prospective pulp and paper mill sites in that town early this month. The results of the survey were not disclosed.

San Juan President Goes East

Ossian Anderson, president of the San Juan Pulp Manufacturing Co., at Bellingham and the Fidalgo Pulp Manufacturing Co. at Anacortes, left Bellingham on August 27 for an extended trip to the East. Mr. Anderson will stop in Wisconsin, where he will call on several of the mills in that territory and will also go to Washington, D. C., and New York.

PACIFIC COAST EXPORTS—JUNE, 1928

	News Print Dollars	Print Pounds	Book Dollars	Book Pounds	Writing Dollars	Writing Pounds	Greaseproof Dollars	Greaseproof Pounds	Wrapping Dollars	Wrapping Pounds
From LOS ANGELES—										
To Mexico	62	984	170	439	52	212			252	3,883
To Australia									375	4,646
From SAN FRANCISCO—										
To Canada			490	2,487					27	233
To Mexico	140	2,557	65	245			94	533	107	5,900
To Australia			189	600					874	13,347
To Philippines	7,461	202,282					42	225	2,572	52,446
To Central America										
To Orient	349	11,000	5,087	93,849			30	28	8,573	171,033
From OREGON—										
To Philippines	22,723	611,215	7,343	142,227	1,585	30,410	1,327	14,612	8,986	198,026
To Orient	81	2,025	1,799	32,470					49	851
To Australia			1,786	38,102	8,576	139,616				
From WASHINGTON—										
To Canada	35	1,088	8,137	112,305	2,571	33,083	186	170	1,393	43,939
To Philippines			9,232	153,284			1,025	11,385	101	196
To Orient					50	25			73	402
Totals	30,851	831,151	34,298	576,008	12,834	203,346	2,704	26,953	23,382	494,502

PACIFIC COAST EXPORTS—JUNE, 1928

	Tissues Dollars	Tissues Pounds	Box Board Dollars	Box Board Pounds	Other Paper & Strawboard Dollars	Other Paper & Strawboard Pounds	Paper Bags Dollars	Paper Bags Pounds	Boxes & Cartons Dollars	Boxes & Cartons Pounds
From LOS ANGELES—										
To Mexico	127	1,561	394	11,074			72	685	421	540
To Australia			553	15,000						
To Orient	85	500	900	31,602						
From SAN FRANCISCO—										
To Canada			830	3,230	27	280	950	15,010	82	1,564
To Mexico			651	26,030	34	1,000				
To Philippines	871	8,485	5,766	180,094	479	4,884	5,064	71,960	306	3,981
To Australia	188	500	19,361	722,564	2,302	21,261	20	120	6	12
To Orient	941	4,129	1,233	4,012	147	987	883	12,517	2,521	21,957
To Central America	527	5,174	1,927	40,175						
To Other S. A.										
From OREGON—										
To Philippines							1,917	51,835		
To Orient			18,708	800,392			1,520	5,789		
From WASHINGTON—										
To Canada	129	1,114	1,181	46,900	275	2,521	224	3,260	42	118
To Orient									38	20
Totals	2,868	21,463	51,023*	1,889,053*	3,369**	35,570**	10,804	162,176	3,616	30,192

Washington shipped 100 tons, \$6810, Sulphite wood pulp to Japan.

*Includes 3408 pounds, \$119 sheathing and building paper shipped from Washington to Soviet Russia.

**Includes 4637 pounds, \$105, paper board shipped from Washington to Soviet Russia.

OVER THE HURDLES

A board machine has as many hazards as a steeplechase track—suction boxes, couch rolls, stock density, whippers, speed of flow.

Here, at Albany, we have found the way to make felts which surmount these handicaps and deliver a good, well finished board at profitable speed.

Albany Felt designers have met and solved this problem with "Tailor-Made" Felts individually designed to meet the actual conditions on the machine for which they are intended, for no single "standard" bottom or top can possibly meet the different conditions that prevail in various mills.

The most convincing evidence of the superiority of Albany "Tailor-Made" Bottoms and Tops is to dress your machines with a set of these individually designed felts and watch results.

ALBANY FELTS

TAILOR-MADE *by* ALBANY FELT COMPANY, ALBANY, N.Y.

"Tailor-Made" Felts
Carry the Board
Over the Hazards
Like a
Thoroughbred



PACIFIC PULP & PAPER INDUSTRY

July Newsprint Production

The News Print Service Bureau's Bulletin No. 127 states that production in Canada during July, 1928, amounted to 184,199 tons and shipments to 181,834 tons. Production in the United States was 110,313 tons and shipments 109,611 tons, making a total United States and Canadian news print production of 294,512 tons and shipments of 291,445 tons. During July, 19,287 tons of news print were made in Newfoundland and 1,369 tons in Mexico, so that the total North American production for the month amounted to 315,168 tons.

The Canadian mills produced 182,334 tons more in the first seven months of 1928 than in 1927, which was an increase of 16 per cent. The United States output was 64,859 tons or 7 per cent less than for the first seven months of 1927. Production in Newfoundland was 15,404 tons or 13 per cent more and in Mexico 748 tons more, making a total North American increase of 133,627 tons or 6 per cent over the first seven months of 1927.

During July the Canadian mills operated at 79.0 per cent of rated capacity and the United States mills at 79.5 per cent. Stocks of news print paper at Canadian mills totaled 48,270 tons at the end of July and at United States mills 40,386 tons, making a combined total of 88,656 tons which was equivalent to 6.0 days' average production.

NORTH AMERICAN PRODUCTION

	Canada	U. S.	foundland	Mexico	Total
1928—July	184,199	110,313	19,287	1,369	315,168
1927—Seven Months	1,342,452	829,113	130,952	9,080	2,311,597
1926—Seven Months	1,160,118	893,972	115,348	8,332	2,177,970
1925—Seven Months	1,056,790	984,623	101,404	7,125	2,149,942
1924—Seven Months	869,386	884,503	41,088	7,434	1,802,411
1923—Seven Months	793,276	874,448	38,118	6,706	1,712,548
	726,960	884,971	37,185	7,000	1,656,116

INTERCOASTAL WATER BORNE SHIPMENTS OF PAPER
JULY, 1928—(Tons)

(WESTBOUND)

Shipments From:	To—	Los Angeles	San Francisco	Portland	Seattle	Tacoma	Totals
Boston		574	642	80	—	—	1,296
New York		1,085	1,765	486	—	—	3,336
Philadelphia		893	2,442	43	—	—	3,378
Baltimore		10	198	41	—	—	249
Norfolk		30	44	—	—	—	74
Other Atlantic Ports		239	427	310	500	122	1,598
Gulf Ports		231	—	132	—	—	363
Totals		3,062	5,518	1,092	500	122	10,294

(EASTBOUND)

Shipments To:	From—	Los Angeles	San Francisco	Portland	Seattle	Tacoma	Totals
Boston		11	—	109	—	—	120
New York		1	27	119	—	—	147
Philadelphia		—	—	143	—	—	145
Baltimore		—	—	2	—	—	2
Norfolk		—	—	—	208	94	302
Other Atlantic Ports		221	—	—	—	—	221
Gulf Ports		—	—	—	—	—	—
Totals		233	27	375	208	94	937

The above figures include all shipments given the general shipping classification of "paper." Additional shipments in intercoastal traffic not included in above figures, and more specifically classified, are as follows: PULP—Seattle to Atlantic Coast, 208 tons; Tacoma to Atlantic Coast, 734 tons; San Francisco to New York, 27 tons; Portland to New York, 19 tons; Boston to San Francisco, 12 tons; Boston to Los Angeles, 12 tons; Philadelphia to Los Angeles, 21 tons. OLD PAPER—San Francisco to Boston, 408 tons; Los Angeles to Boston, 700 tons; Boston to Portland, 103 tons.

PACIFIC COAST IMPORTS—JUNE, 1928

	Pulpwood Dollars	Cords	Mechanically Ground Pulp Dollars	Tons	Bleached Sulphite Dollars	Tons	Unbleached Sulphite Dollars	Tons	Unbleached Sulphite Dollars	Tons
TO SAN FRANCISCO—										
From Canada			5,777	256						
From Sweden			—	—			16,113	350	19,399	349
TO WASHINGTON—										
From Canada	94	17	—	—	4,485	62	8,157	207	—	—
TO OREGON—										
From Canada	—	—	—	—	—	—	—	—	22,322	637
TO LOS ANGELES—										
From Canada	—	—	665	23	—	—	9,191	178	—	—
Totals	94	17	6,442	279	4,485	62	33,461	735	41,721	986

PACIFIC COAST IMPORTS—JUNE, 1928

	Newsprint Dollars	Pounds	Printing Papers Dollars	Pounds	Writing Dollars	Pounds	Greaseproof Dollars	Pounds	Wrapping Dollars	Pounds	Tissues Dollars	Pounds
TO SAN FRANCISCO—												
From Sweden	65,483	2,382,377	2,912	77,728	—	—	—	—	4	16	—	—
From Canada	209,041	6,485,692	73	345	269	881	—	—	80	750	—	—
From Orient	—	—	—	—	36	42	—	—	—	—	—	—
From France	—	—	—	—	517	1,252	—	—	—	—	—	—
From Germany	—	—	2,680	544	319	791	—	—	—	—	406	195
From Other European	—	—	—	—	—	—	—	—	—	—	—	—
TO WASHINGTON—												
From Canada	292,488	8,705,538	—	—	97	417	—	—	—	—	—	—
From Sweden	2,566	103,415	—	—	348	596	—	—	—	—	—	—
From France	—	—	17	198	244	80	—	—	—	—	—	—
From Australia	—	—	—	—	489	2,048	—	—	1,590	95,150	261	544
From Orient	—	—	—	—	—	—	—	—	—	—	45	148
From All Others	—	—	—	—	—	—	—	—	—	—	29	68
TO OREGON—												
From Norway	432	12,936	—	—	—	—	—	—	13	35	—	—
From Germany	—	—	—	—	30	130	—	—	—	—	—	—
From Orient	—	—	—	—	—	—	—	—	—	—	—	—
TO LOS ANGELES—												
From Canada	157,874	4,648,963	—	—	—	—	—	—	—	—	—	—
From Norway	10,859	394,059	—	—	—	—	—	—	966	25,105	—	—
From Sweden	17,894	669,630	—	—	221	495	—	—	—	—	—	—
From France	—	—	183	211	5	12	220	2,187	—	—	—	—
From Germany	—	—	—	—	4	13	—	—	—	—	—	—
From Other European	—	—	508	256	—	—	—	—	—	—	—	—
From Orient	—	—	—	—	—	—	—	—	—	—	—	—
Totals	756,637	23,402,610	6,373	79,282	2,582	6,757	220	2,187	2,653	121,056	741	955



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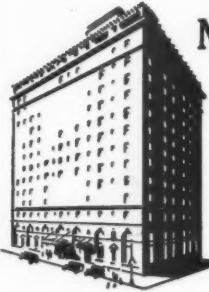
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Columbia River Paper Co. Condition Sound

Soundness of condition and progressive attitude are reflected in the statement issued to stockholders of the Columbia River Paper Co. covering the first half of 1928. The company is a holding company for the Columbia River Paper Mills at Vancouver, Wash.; the Oregon Pulp & Paper Co. at Salem, Ore.; the California-Oregon Paper Mills at Los Angeles, Calif., and the Vancouver Kraft Co., at Port Mellon, B. C. President F. W. Leadbetter in conveying the statement remarks as follows:

"You will note that our earnings for the first six months' period almost met the requirements for the second preferred stock for the full year of 1928, there being no first preferred stock outstanding.

"In view of the fact, however, that very large capital expenditures were necessary at all three mills, and in addition it was necessary to invest considerable sums of money in new plants and equipment needful to our business, your directors could not see their way clear to pay any dividend on the second preferred stock on July 1, but hope that the earnings will continue for the balance of the year and that a curtailment of expenditures will be made that will allow a dividend to be paid at the end of the fiscal year."

In explaining the expenditures the statement points out that they "include the finishing of the installation of an additional paper machine and beating equipment at Vancouver; the installation of a steam turbine at an expense of about \$150,000; the purchase of property and the building of a large addition to house the machinery of the Union Bag & Paper Corp., who are installing a large bag factory on our property; additional beaters for the paper mill; and additions to and additional equipment for the sawmill unit; altogether totaling at Vancouver alone something over \$250,000 exclusive of the paper machine already provided for all of which was deemed necessary by your directors and should greatly enhance the earning capacity of your property."

"At Salem very large expenditures in the sulphite plant were necessitated by additional capacity needed, and the rebuilding of the sulphite mill, with the addition of the digester and complete boiler units as well as additions and betterments to the bleaching department, have also cost a very large sum of money."

"Our Los Angeles mill has made large investments in connection with the taking over of the citrus paper contract in Florida and a very extensive program of betterments has been in progress at the mill, which should be reflected in future earnings and make your holdings increasingly valuable."

"You will be interested to know that our new kraft development in British Columbia is progressing favorably and that apparently its financial requirements for its reconstruction and increased production have been provided for by a bond issue, so that it is probable that little further money will be required from our constituent companies. In general, our financial condition is quite satisfactory and we are able to meet the requirements of the various companies from funds within our own control and at the present time none of the companies have any banking indebtedness whatever."

The balance sheet of the Columbia River Paper Co. accompanying the letter to the stockholders shows the corporation to have assets of \$11,221,811.11. It has set aside \$1,598,708.93 as a depreciation and depletion item, and a surplus of \$448,789.04 is shown. These items indicate that there is little doubt that the full year's dividend will be paid at the end of the fiscal year.

Crown Zellerbach Earnings Show Increase

Net profit of the Crown Zellerbach Corporation for the three months ended July 31 amounted to \$1,759,797.90, as against \$1,318,652.27 in the corresponding period of last year, or a gain of over \$440,000, the report released by the company on September 7 shows.

Gross income increased approximately \$500,000, or from \$2,705,576.11 to \$3,210,194.56. Depreciation and depletion charges were advanced to \$891,321.95 from \$804,786.74, leaving a net profit from operations of \$2,318,872.61 in the quarter ended July 31, 1928, as against \$1,900,789.37 in the same period of 1927.

After making provision for dividends on the stock of subsidiary companies in the hands of the public, there was a balance of \$1,326,166.79 available for payment of dividends on the outstanding preferred stocks of the corporation, and after paying such preferred stock dividend a balance of \$1,067,614.29 for the common stock, which is at the rate of \$25.91 per annum per share of preferred stock, or over five times the dividend requirements, and at the rate of \$2.17 per annum per share of common stock, as compared with \$17.27 for the preferred and \$1.27 for the common during the same period the previous year.

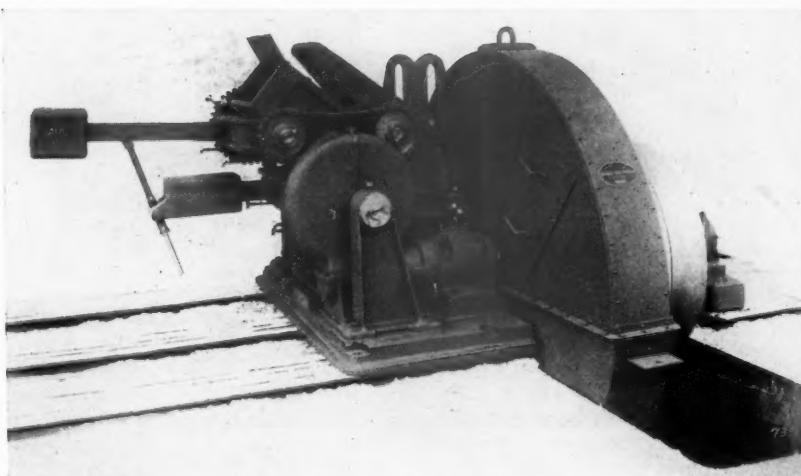
After giving effect to the issuance of stocks provided for under the reorganization plan and making provision for common shares still to be exchanged for Crown Willamette Paper Company's common stock outstanding, the consolidated balance sheet of the Crown Zellerbach Corporation as of July 31, 1928, is as follows:

Assets	
Current	\$21,651,906.73
Other accounts received	270,830.51
Investments	8,194,062.59
Capital assets	73,660,335.32
Deferred charges	1,442,861.36
Total	\$105,219,996.51
Liabilities	
Current	\$ 8,747,263.41
Mortgages contracts payable	142,825.00
Other notes payable	1,020,000.00
Bonds payable	23,981,650.00
Special reserves	1,052,811.29
Capital stock and surplus	70,275,446.81
Total	\$105,219,996.51

Hanny Visits Seaside

Mr. J. E. Hanny, mill manager of West Linn division of Crown Willamette Paper Co., with Mrs. Hanny and their daughter spent a vacation at Seaside, Oregon.

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Alaska Survey May Take Another Year

Engineers are making the best of the summer season in pushing the preliminary surveys looking toward the establishment of huge paper mills in Alaska. A floating camp operating south of Juneau, capital city of the Northern territory, is the base for an engineering crew. The work in connection is of a most extensive nature, and there is some possibility that surveys will not be completed in the time first specified and that extensions of time may be necessary. Studies of both power and pulpwood stands are being surveyed by parties now in the field.

Two immense tracts have been granted, one to J. D. and I. Zellerbach, and one tract to George T. Cameron, San Francisco publisher. The former tract is in the vicinity of Ketchikan and the latter in the vicinity of Juneau.

No statement is as yet forthcoming regarding the probable location of the Alaska mills, and it is probable that no report will be available until the engineering parties come in with the closing of the favorable cruising season and begin to make office studies of their field notes.

Present indications, however, point to the selection of a site near Juneau for one project. The Speel River is looked on with favor for the establishment of a power site. A small groundwood mill has already tapped this great power source, although the mill is not in operation at present. Routes for transmission of power from this site are at present being investigated by A. J. Ela, engineer. Some investigation work has been done in the Speel River district previously and data from these previous efforts is speeding up the present work.

The surveys are under the direction of R. A. Kenzie and Don Meldrum. Mr. Meldrum, it is understood, is now cruising timber in the Zellerbach tract in the vicinity of Ketchikan. Survey work in this tract has not been moving forward with such speed as in the other tract because the territory is virgin. While no sites have been selected, the Zellerbach group has been making a close study of Revilla Island, on which Ketchikan is situated, and has been looking on that area with favor. The favored sites are 35 to 50 miles from Ketchikan.

Wisconsin Mill Buys Tract of Colorado Timber

Pueblo, Colorado, is a step nearer to the realization of a 25-year-old dream of having a paper mill to add to its list of industries through the purchase of 25 million board feet of Engleman spruce in the San Isobel country by a paper firm in Appleton, Wisconsin. Pueblans see in this a likelihood of building a paper mill to make use of the large supplies of Engleman spruce in southern Colorado. For some time eastern paper houses have been experimenting with Engleman spruce to ascertain its desirability for paper making. Recently the wood has been pronounced as excellent for paper and Pueblo business men at once saw the possibility of a paper mill in their midst.

The Pueblo Commerce Club immediately took steps to bring a paper mill to the city. The secretary was instructed to extend an invitation to the Appleton company to establish a mill. The letter called attention to the splendid facilities afforded for factory operation in Pueblo. Transportation conditions were called ideal in that Pueblo is the only city of any size having direct connection with the San Isobel national forest, has a direct outlet to the East over the Missouri Pacific and connections north and south over the Denver and Rio Grande Western and the Santa Fe. Power and water facilities were stressed in the secretary's letter as offer-

ing a splendid inducement for any factory. A choice of a factory site was also offered. It was pointed out that Pueblo is primarily a manufacturing city and is growing rapidly because of this fact. The Commerce Club offered its cooperation in locating a new industry.

No word has been given out as yet regarding the attitude of the Wisconsin paper firm toward building the mill in Pueblo or in Colorado. Pueblans are relying on the announcement made by executives of the company last winter that if the Engleman spruce was found suitable for paper making a mill would be built. Since the experts conducting the experiments have given out their gratifying report and since the purchase of the 25 million board feet of the spruce heretofore considered almost useless those who have been urging a mill all these years are confident their expectations are about to be realized.

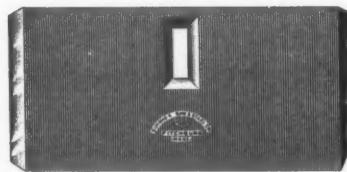
Eddy Impressed With Substantial Growth

Belief that the growing pulp and paper industry of the west is on a very sound basis was expressed recently in San Francisco by E. B. Eddy, manager of the National Paper Products plant at Carthage, N. Y. Mr. Eddy this summer spent several months in the west, visiting plants of the Crown-Zellerbach Corporation, Fibreboard Products, Inc., and other companies.

Mr. Eddy said he had noticed that, with one or two exceptions, western capital and western enterprise were backing and encouraging this growth. "Of course," he added, "the big markets remain in the east."

One point that impressed Mr. Eddy was the splendid and substantial type of construction going into the new plants in this field. He said the two new plants at Port Townsend and Hoquiam were outstanding examples of high type plant construction.

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